8-2018

Adult Attachment in Close Relationships and Trait Emotional Intelligence: The Moderating Role of Mindfulness

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ADULT ATTACHMENT IN CLOSE RELATIONSHIPS AND TRAIT EMOTIONAL INTELLIGENCE: THE MODERATING ROLE OF MINDFULNESS

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

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College of Education and Behavioral Sciences
Department of Counseling Psychology

August 2018

This Dissertation by: Laura Kimberly Chang

Entitled: *Adult Attachment in Close Relationships and Trait Emotional Intelligence: The Moderating Role of Mindfulness*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in College of Education and Behavioral Sciences in the Department of Applied Psychology and Counselor Education, Program of Counseling Psychology

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ABSTRACT

Chang, Laura Kimberly. *Adult Attachment in Close Relationships and Trait Emotional Intelligence: The Moderating Role of Mindfulness*. Published Doctor of Philosophy dissertation, University of Northern Colorado, 2018.

The moderating role of mindfulness on the relationships between trait emotional intelligence (TEI) and both attachment-related anxiety and avoidance among college students ($N = 510$) was explored in the present study. Descriptive statistics and Pearson correlations aligned with the extant body of literature, suggesting strong relationships between attachment-related anxiety, avoidance, and TEI. As expected, results suggested a strong relationship between levels of mindfulness and TEI. In the interest of assessing the degree to which mindfulness explained variance in participants' TEI levels (while accounting for attachment levels), a hierarchical multiple regression was conducted. Data analysis indicated that the variables college classification (e.g., freshman), attachment-related anxiety, mindfulness, and the moderator variable of attachment-related anxiety with mindfulness each made unique and significant contributions to the overall explained variance in global TEI levels. Mindfulness did not explain a significant amount of variance in TEI levels among participants who reported higher levels of attachment-related avoidance. Findings were interpreted and expanded upon through the lens of attachment theory as both a relational and emotion-regulation model. Practice implications were discussed as they may meet the unique needs of adults with higher levels of attachment-related anxiety. Mental health professionals may be better equipped

to treat this population more effectively by integrating mindfulness-based interventions into the therapeutic process. Thus, clinicians may anticipate the individuals who demonstrate increased levels of mindfulness to also express increased levels of TEI.

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CHAPTER I

INTRODUCTION

"Do you have patience to wait till your mud settles and the water is clear? Can you remain unmoving till the right action arises by itself?" – *Lao Tzu*

Lao Tzu, an ancient Chinese philosopher, is thought to have written the *Tao Te Ching* approximately 2,500 years ago. This poetic text is rich with essential principles and teachings involved in living in harmony with the essence of the universe. The introductory quote to this study poses a poignant question about one's ability to be still in the present moment, mindful of impulses to act, and trust that the right action will emerge naturally. This task is both simple and difficult. For those who have struggled to develop an inner sense of attachment security, mindfulness of the present moment, and belief in their own emotional competency, this task may very well seem impossible.

We are born into a world filled with external stimulation, social interactions, and expectations. Not only must we learn how to navigate this world of activity and movement, we must also learn how to manage our thoughts, emotions, and behaviors in order to reach desired goals, develop harmonious relationships with others, and maintain our overall well-being. We learn about who we are, how to interact with others, and how to manage our internal experiences through early interactions with our parents or primary caregiver(s). Some people are fortunate by experiencing stable and caring environments that provide individuals with an internalized stable sense of self, ability to effectively

interact with others, and capacity for self-regulation. Others are less fortunate and may struggle to know who they are, understand emotional processes, or develop healthy relationships.

Attachment

It is within the early developmental context that individuals acquire secure or insecure attachments, which may contribute to the manifestation of individual differences in one's perceived ability to identify, manage, and respond to intrapersonal and interpersonal emotional information (i.e., trait emotional intelligence, or TEI). People naturally demonstrate prominent dispositional tendencies toward mindfulness, which enables a nonjudgmental, curious, and accepting attitude toward the present moment, including the full range of emotional experiences. It is possible that trait mindfulness plays a meaningful role in explaining one's level of emotional intelligence, while accounting for the generally stable nature of the individual's attachment style over the lifespan.

Adult attachment styles in close relationships are developed through early repetitive interactions with parents and/or primary caregivers that are experienced as either anxiety-provoking, potentially leading to the development of an insecure attachment, or rewarding and stable, ostensibly building a secure attachment bond (Bowlby, 1973). The degree to which an individual manifests a secure or an insecure attachment style in adulthood is measured along two continuous dimensions of attachment-related anxiety and attachment-related avoidance (Fraley & Waller, 1998; Fraley, Waller, & Brennan, 2000), with these scores providing insight into the extent to which the individual exhibits a secure or an insecure pattern of relating to others.

Conceptually, increasingly secure individuals actively engage others in relationships and are not anxious around others. These securely attached individuals may have highly developed levels of emotional intelligence, allowing them to effectively interpret and manage emotional information without an underlying sense of anxiety or avoidance.

Emotional Intelligence

The basic concept behind emotional intelligence (EI) is that there are significant differences between individuals regarding the manner and extent to which they pay attention to, process, and then utilize emotional information that is both intrapersonal (within the individual) and interpersonal (within the context of social interactions). Emotional intelligence has been conceptualized in various ways (e.g., as an ability versus a trait), although there is significant overlap between various definitions and facets of EI. Petrides (2009) provided the example of emotion perception (i.e., clarity about one's own and others' feelings) as a facet that is common to various conceptualizations of EI, although the primary difference between EI models relates to the manner in which the construct is measured.

Trait emotional intelligence (TEI) is considered to be an individual's self-perceptions of his or her own emotional competence, or emotional self-efficacy. Individuals with healthy levels of TEI tend to have more highly developed beliefs in their capacity for overall well-being, effective social interactions, self-control, and emotionality (Petrides, 2009). The general concept of self-efficacy is defined as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura, 1994, p. 71). From a TEI perspective, emotional self-efficacy is a clearly identifiable personality trait that is

associated with many emotional, behavioral, and social benefits. One's sense of strong emotional self-efficacy, or high level of TEI, naturally transitions into an individual's capacity to demonstrate and experience dispositional mindfulness in daily living.

Mindfulness

Trait mindfulness is a dispositional tendency toward awareness and acceptance of the present moment, typified by a curious and nonjudgmental attitude toward internal (e.g., thoughts, emotions, and sensations) and external events (e.g., interpersonal interactions and engagement with the material world) (Brown, Ryan, & Creswell, 2007). The trait-like form of mindfulness discussed in the current study focuses on an "intentional, reflective style of introspection or self-observation that . . . differs from concentrative meditation" (Lau et al., 2006, p. 1448). Development of trait mindfulness through practice (Bishop et al., 2004) may foster increases in awareness and decreases in impulsive reactivity to emotions (Kabat-Zinn, 1994). This attitude may allow individuals to more effectively understand and utilize emotions and have more positive interactions with others.

Statement of the Problem

Attachments developed during early childhood through repetitive interactions with parents or primary caregivers have a profound impact on the child's future abilities as an adult to develop effective interpersonal skills and experience an intrinsic sense of self-confidence that leads to both self-determination and effective coping skills in the face of adversity (Hamarta, Deniz, & Saltali, 2009). Research indicates a relationship between attachment style and emotional intelligence; general findings suggest a significant positive correlation between secure attachment style and emotional

intelligence (Kafetsios, 2004; Kim, 2005; Peck, 2003; Zimmermann, 1999). Based on this established relationship between attachment style and emotional intelligence and the emotional and interpersonal difficulties that individuals with insecure attachment styles may face as adults, it is important to consider what traits or abilities these individuals may learn and develop in order to increase their capacity for stronger emotional self-efficacy. Specifically, it is possible that individuals may develop trait mindfulness, and research investigating trait mindfulness as it relates to attachment style and emotional intelligence is warranted.

There is a strong body of evidence correlating trait mindfulness with greater subjective well-being (Baer et al., 2008; Brown, Kasser, Ryan, Linley, & Orzech, 2009; Brown & Ryan, 2003; Falkenström, 2010; Howell et al., 2008). Furnham and Petrides (2003) found that TEI explained over 50% of the total variance in happiness, with this relationship persisting in the face of the Big Five personality factors: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (Costa & McCrae, 1992). Research indicates that individuals with a secure attachment style experience higher levels of psychological well-being (Love & Murdock, 2004) and report greater levels of emotion regulation and adjustment (Cooper, Shaver, & Collins, 1998). While a considerable amount of research indicates significant positive relationships between trait mindfulness and multiple healthy psychological constructs, further research is needed to understand the potential role of mindfulness on the relationship between attachment style and emotional intelligence.

In clinical settings, the overarching goal of incorporating mindfulness-based practices into treatment is to increase insight into the ways in which entrenched patterns

of over identification with and reactivity to sensations, thoughts, and emotions increase subjective levels of stress and emotional distress (Shapiro & Carlson, 2009). Given that mindfulness-based clinical interventions are designed to increase one's ability to more effectively interpret, regulate, and respond to emotional states with greater objectivity (Shapiro & Carlson, 2009), it is worth examining the potential moderating role of mindfulness on the relationship between anxious and avoidant attachment levels and emotional intelligence. To date, research has not examined this area, and this is a problem worth investigation since attachment styles are relatively stable across time (Fraley, 2002; Fraley & Brumbaugh, 2004), whereas mindfulness is a skill and attitude that can be cultivated and strengthened through practice (Bishop et al., 2004). Additionally, greater TEI is generally associated with a wealth of intra- and interpersonal benefits (Keng, Smoski, & Robins, 2011; Schutte & Malouff, 2011).

In summary, due to the generally stable nature of attachment style over the lifespan, the numerous intrapersonal and interpersonal difficulties that individuals with insecure attachments may face in adulthood and the mounting evidence that higher levels of mindfulness have positive effects on subjective well-being, happiness, and emotional intelligence, it is vital to understand the potential impact of mindfulness on the relationship between anxious and avoidant attachment levels and emotional intelligence.

Theoretical Framework

Attachment Theory

In the past few decades, attachment theory (Bowlby, 1969) has become established as a prominent and extensively researched theoretical framework utilized in the study of personality development, interpersonal relationships, and emotional

regulation (Fraley, Heffernan, Vicary, & Brumbaugh, 2011) and was applied to the current study to understand the relationships among the constructs of attachment-related avoidance and anxiety, emotional intelligence, and mindfulness. Attachment theorists contend that relational patterns and interactions initially develop within the parent-child relational context; these patterns and interpersonal expectations are maintained and repeated in adult relationships (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969). A core assumption of attachment theory involves the premise that individuals construct mental representations, or working models, of themselves and others based on interpersonal interactions. Based on these mental representations, individuals are thought to develop self-schemas (i.e., beliefs and ideas about oneself) (Markus, 1977) that influence how he or she interprets, understands, and interacts within the larger social environment.

The ability to effectively identify, regulate, and utilize one's emotions (i.e., emotion regulation) is an important aspect of emotional intelligence. Attachment theory has been considered an emotional-regulation model, in the sense that "internal working models of attachment [can] be understood as the entire rules that orient an individual's emotional reactions to stressful situations" (Kobak & Sceery, 1988, p. 142). Bretherton and Munholland (1999) postulated that interactions with others are guided by expectations and memories that emanate from internal working models, which then serve to impact and enable adaptive or maladaptive evaluation of future interpersonal interactions. Attachment style develops within the context of meaningful early relationships with parents or primary caregivers and relates to the child's subjective experience of "felt security" within the relational bond (Ainsworth, 1982).

Attachment theory and research suggest that individuals with insecure attachments tend to use maladaptive or ineffective cognitive strategies in attempts to manage emotional responses. Studies have found that attachment-related avoidance is related to a tendency toward suppression and denial of emotional states (Mikulincer, Shaver, & Pereg, 2003), and attachment-related anxiety is connected to rumination and overly intensifying negative emotional responses (Mikulincer & Shaver, 2007). These connections between insecure attachments and maladaptive strategies of emotion regulation provide insight into the difficulties that individuals with insecure attachments may face in the development of emotional intelligence.

The concept of mentalization arises out of attachment theory and refers to a "core process of human social functioning and self-regulation, involved in the establishment of robust links between personally meaningful early experiences and their representation" (Bouchard et al., 2008, p. 48). It is thought that secure mental representations of early attachment bonds are vital components of favorable developmental outcomes and that the impact of attuned caregiving in one's early years endures throughout the lifespan (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). Attachment has become increasingly understood in relation to self-regulatory processes (Polan & Hofer, 1999), which are at the foundation of multiple facets of TEI (Petrides, 2009). Fonagy and Target (2002) found that the relationship between infant and adult adaptation appears to be mediated by important self-regulatory capacities, such as regulation of the stress response, attention, and mentalization. A parent or primary caregiver's capacity to demonstrate a more complex conceptualization of mentalization, also referred to as reflectiveness, appears to be "linked with attachment insofar as a caregiver's mindfulness

about a child's mental states appears as a key mediator of the transmission of attachment" (Bouchard et al., 2008, p. 48). By understanding the impact that a primary caregiver's level of mindful attunement to a child's mental states has on the development of the child's attachment, the connections between trait mindfulness and attachment begin to become clearer.

Attachment theory provided the foundation for the emergence of Bartholomew and Horowitz's (1991) identification of four categorical adult attachment styles, one of which is deemed secure and the other three (i.e., dismissive, preoccupied, and fearful), although distinct from one another, are considered insecure attachment styles. This concept of attachment style is useful in understanding the construct of trait mindfulness in the sense that a fundamental aspect of being mindful involves a tendency toward feeling secure and stable with one's own presence within the constantly unfolding present moment and a willingness to sit with uncomfortable thoughts, emotions, and sensations (Kabat-Zinn, 1994). Mindfulness also involves an attitude of acceptance and nonjudgment toward the present moment, even when the present moment involves distressing interpersonal interactions or relationship losses.

Research indicates that insecurely attached individuals experience higher levels of psychological distress (Davila & Bradbury, 2001), destructive behaviors during conflict-related discussions in close relationships (Collins & Feeney, 2000), lower relationship satisfaction, and declines in relationship quality over time than securely attached individuals (Davila, Karney, & Bradbury, 1999). When one is overwhelmed or unable to effectively manage intense emotions or distress, it is increasingly difficult to become mindful (Linehan, 1993a), as mindfulness involves acceptance and tolerance of

uncomfortable thoughts and emotions. It would follow that individuals with high levels of anxious or avoidant attachment may struggle to maintain an attitude of mindfulness in the face of (real or perceived) interpersonal threats and internal distress.

Purpose and Rationale

The purpose of this study was to examine the potential moderating role of trait mindfulness on the relationships between TEI and both attachment-related avoidance and anxiety. Both adult attachment and TEI are considered to be relatively stable constructs across time (Fraley, 2002; Fraley & Brumbaugh, 2004; Smith, Ciarrochi, & Heaven, 2008), whereas mindfulness is a skill that can be learned and practiced, and ultimately becomes a stable trait (Bishop et al., 2004). In this study, I examined the role of mindfulness in explaining anxious and avoidant attachment levels and how the strength or direction of the relationship between these attachment levels and TEI differed, depending on individuals' levels of mindfulness. Based on prior research, I anticipated that there would be a significant relationship between higher levels of anxious and avoidant attachment and lower levels of TEI. It was also expected, based on prior findings, that there would be a significant positive relationship between trait mindfulness and TEI.

The literature provides consistent linkages between these aforementioned constructs in meaningful ways, but has yet to examine all three simultaneously and provide insight into the potential moderating role of trait mindfulness on the relationship between anxious and avoidant attachment levels and TEI. Perhaps individuals with anxious and avoidant attachment levels can strengthen their levels of emotional self-efficacy through learning to be more mindful in everyday living (i.e., acquiring trait

mindfulness through practice) (Bishop et al., 2004). For example, a recent study provides evidence that trait mindfulness may be increased through contemplative emotion training, which involves a combination of meditation, yoga, and education on emotional intelligence (Kemeny et al., 2012).

Furthermore, this study may also provide useful clinical information for psychotherapists by providing insight into the way in which clients' sense of emotional self-efficacy (i.e., TEI) may be understood, based on their levels of mindfulness. For psychotherapists who have assessed clients' adult attachment styles through measures such as the Adult Attachment Interview (AAI) (George, Kaplan, & Main, 1985) or the Relationship Structures questionnaire (ECR-RS) (Fraley et al., 2011), this research may inform treatment goals and interventions related to cultivating emotional self-efficacy (TEI) and/or mindfulness. Therefore, the current study investigated two research questions and two research hypotheses.

Research Questions and Hypotheses

The following research questions and hypotheses were investigated in this study.

Q1 To what extent will levels of trait mindfulness moderate the relationship between levels of attachment related avoidance and levels of emotional intelligence?

Q2 To what extent will levels of trait mindfulness moderate the relationship between levels of attachment related anxiety and levels of emotional intelligence?

H1 The relationship between levels of attachment related avoidance and levels of TEI will significantly change depending on the presence and level of trait mindfulness.

H2 The relationship between levels of attachment related anxiety and levels of TEI will significantly change depending on the presence and level of trait mindfulness.

Definition of Terms

Attachment-related avoidance: In this study, attachment-related avoidance refers to "the extent to which people are uncomfortable being close to others vs. secure depending on others" (Fraley, 2012, para. 1); in other words, the degree of not desiring closeness with others (Fraley, 2012).

Attachment-related anxiety: In this study, attachment-related anxiety refers to "the extent to which people are insecure vs. secure about the extent to which their partner's availability and responsiveness" (Fraley, 2012, para. 1); in other words, the degree of fearing interpersonal rejection and abandonment (Fraley, 2012).

Trait emotional intelligence (TEI): In this study, TEI refers to the "constellation of behavioral dispositions and self-perceptions concerning one's ability to recognize, process, and utilize emotion-laden information" (Petrides, Frederickson, & Furnham, 2004, p. 278). In addition, "Trait emotional self-efficacy is an alternative label for the same construct" (Petrides, 2009, p. 12).

Trait mindfulness: In this study, trait mindfulness refers to

> [a dispositional proclivity toward] paying attention to present-moment experiences, labeling them with words, acting with awareness, avoiding automatic pilot, and bringing an attitude of openness, acceptance, willingness, allowing, nonjudging, kindness, friendliness, and curiosity to all observed experiences. (Baer, 2010, p. 28).

Limitations

Potential limitations of this study included the inherent limitations involved with both self-report measures and online survey methods. For instance, there is always a

possibility for response distortions (e.g., social desirability bias). Another potential limitation involved difficulty in ascertaining the true response rate, as online links to the complete survey packet were disseminated to professors, students, listservs, and online forums via e-mail. A larger response rate may have been obtained by sending a reminder message to potential respondents via e-mail following the initial participation invitation. Sheenan and Hoy (1997) observed that sending a reminder message has the potential to raise the response rate by as much as much as 25% in online surveys distributed via e-mail.

Summary

This study explored the potential moderating role of trait mindfulness on the strength and direction of the relationships between attachment-related avoidance and attachment-related anxiety with trait emotional intelligence (TEI). Literature consistently demonstrates the relatively stable nature of attachment over the lifespan, as well as a clear relationship between adult attachment and emotional self-efficacy (TEI). Mindfulness continues to grow as an area of research within psychology and demonstrates a multitude of benefits that can be acquired and potentially increase levels of TEI. Research suggests that some individuals with insecure adult attachment orientations express higher levels of TEI than most insecurely attached adults.

As psychotherapy continues to expand in its development, use, and demonstrated efficacy of behavioral mindfulness-based therapeutic modalities (e.g., dialectical behavior therapy (DBT), acceptance and commitment therapy (ACT), and mindfulness-based cognitive therapy (MBCT), it is important to understand the potential impact of trait mindfulness levels on the relationship between anxious and avoidant adult

attachment levels and concurrent trait emotional intelligence levels. Insight into this potential moderating role may increase awareness of the differences between securely and insecurely attached adults' levels of TEI, based upon levels of trait mindfulness. Specifically, findings from this study may provide useful information for future research on how to effectively increase adults' levels of TEI based upon understanding of their individual attachment orientations and naturally occurring levels of trait mindfulness.

CHAPTER II

REVIEW OF THE LITERATURE

Attachment

Adult attachment style in close relationships is based on the theoretical underpinnings of attachment theory (i.e., a way of conceptualizing the nature of meaningful relational bonds and security in relationships) (Ainsworth et al., 1978; Bowlby, 1973), which will be discussed in further detail as the underlying theoretical framework utilized in the current study. For the purposes of this study and in the interest of utilizing the most current literature and research, adult attachment levels will be discussed and measured based on two underlying continuous dimensions, attachment-related anxiety and attachment-related avoidance (Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998; Fraley et al., 2000), although scores on these continuous dimensions have the capacity to be conceptualized as one of four categorical attachment "styles," based on Bartholomew and Horowitz's (1991) research.

Adults who tend to report lower scores on both the attachment-related anxiety and avoidance dimensions are generally considered to be securely attached individuals. Adults with a secure attachment style tend to recall consistent memories and judgments of their childhoods with relative ease and are able to acknowledge the impact of past experiences on their interpersonal experiences as adults (Teyber & McClure, 2011). When these individuals (i.e., securely attached adults) experience emotional distress, they

tend to appropriately and effectively seek out emotional support from others. Past research has found secure attachment style to be positively correlated with adaptive perception, understanding, facilitating, and management of emotions (Kafetsios, 2004; Kim, 2005; Peck, 2003; Zimmermann, 1999).

Adults who express low scores on attachment-related avoidance and high scores on attachment-related anxiety are considered to struggle with a unique form of insecure attachment, conceptualized as preoccupied or anxious/ambivalent (Brennan et al., 1998). This form of insecure attachment is typified by a mental and emotional preoccupation with past and/or present relationships, with the primary preoccupation centering around whether or not significant others will be readily available and not likely to leave or disappoint them. While these individuals tend to experience an intense desire for closeness in relationships, they may also be preoccupied with whether or not they can depend on their significant others to be there to consistently and/or adequately meet their needs (Teyber & McClure, 2011). A preoccupied attachment style is particularly prevalent among clinical inpatients with borderline personality disorder (BPD). Fonagy and colleagues (1996) found 75% of BPD inpatients were classified as preoccupied. Another study by Levy (2005) found that 64% of BPD inpatients had a preoccupied attachment style, as compared to 46% of the non-BPD inpatients.

Another form of insecure attachment, conceptualized as dismissing or dismissing-avoidant, occurs in adults who report high scores on the attachment-related avoidance and low scores on attachment-anxiety dimensions (Fraley & Shaver, 1997). Dismissive adults tend to experience a deep mistrust of significant others' abilities to provide emotional and social support when they need it. This mistrust may translate into

presenting a (possible) façade of oneself to the world as independent, self-sufficient, and competent. These adults may have learned in childhood that it is unacceptable to display vulnerability and need, which may understandably lead to later tendencies as adults to deny to themselves and others their innate needs for emotional support and social connection (Teyber & McClure, 2011).

Adults who report high scores on both attachment-related anxiety and attachment-related avoidance can be understood to display characteristics of a third form of insecure attachment--fearful--with these adults showing tendencies to display a wide variety of maladaptive symptoms and contradictory behaviors that are generally the result of parental hostility, abuse, or overt rejection (Bartholomew & Horowitz, 1991). These individuals may have internalized a deep sense of unworthiness, shame, and social insecurity that can manifest itself in severe difficulties with trusting others. The core childhood dilemma for these people often revolves around the fact that their primary attachment figures, supposed sources of safety and support, were sometimes frightening or even terrifying. As adults, these people may have a deep desire to reach out to others, but may quickly become overwhelmed by anxiety or terror related to fears of further abuse or rejection (Teyber & McClure, 2011).

For individuals who developed any form of insecure attachment style through repetitive maladaptive interpersonal interactions within their early relationships with parents or primary caregivers, it is often particularly difficult to maintain confidence in the ability to identify, manage, and respond to the emotions of themselves (intrapersonal EI) and those of others (interpersonal EI) effectively. Many people with insecure adult attachment styles significantly struggle to both develop and maintain healthy romantic

relationships (Collins & Feeney, 2000; Davila et al., 1999), which may make the natural process of psychosocial development that much more difficult than it may be for securely attached adults. Emotional intelligence (EI) is an inherent component of psychosocial development, in that higher levels of EI tend to enable individuals to more accurately identify, regulate, and respond to emotional states, which contributes to development of more effective relationships with others.

Emotional Intelligence

Trait mindfulness intelligence differs from ability EI in the sense that TEI is concerned with trait emotional self-efficacy, measured through self-report, whereas ability EI is concerned with emotion-related cognitive abilities, measured through performance based tests (Petrides, Pita, & Kokkinaki, 2007). Petrides (2009) stated, "The primary basis for discriminating between trait EI and ability EI is the measurement approach and not the theoretical domains of the various EI conceptualizations" (p. 11). He also noted that the conceptualization of TEI as a personality trait is consistent with current models of individual differences and personality taxonomies. While TEI includes the word "intelligence," it is conceptualized as a distinct personality trait composed of a constellation of emotional self-perceptions, lying completely outside the basic realm of cognitive ability (Petrides, 2009). A fundamental argument behind proponents of the TEI model is that EI cannot be accurately measured as a mental ability due to the inherently subjective nature of emotions and the contention that assessment of mental abilities through self-report measures is psychometrically invalid (Petrides, 2009).

Within the trait EI model, the overarching concept of emotional self-efficacy--synonymous with TEI--involves the following four interrelated factors: (1) well-being

(i.e., personality traits that relate to one's general disposition or mood); (2) self-control (i.e., traits related to one's perceived competence in effectively regulating emotions and impulses); (3) emotionality (i.e., traits connected to one's perception and expression of emotions); and (4) sociability (i.e., traits related to interpersonal utilization and management of emotions) (Petrides, 2009; Petrides, Pita et al., 2007). Extending beyond these four factors are 15 facets of TEI, nested underneath the prior four factors, along with the capacity to derive a global TEI score.

Trait emotional intelligence has been isolated as a unique personality factor in Eysenckian and Big Five factor space. As a unique lower-order trait, TEI has the potential to lead to marked improvements in the ability to predict individuals' behaviors, achievement, and attitudes. In fact, Sinclair and Feigenbaum (2012) have discovered that TEI scores are able to predict BPD diagnoses with 95% accuracy, which indicates that TEI may be a useful assessment and outcome measure in the treatment of BPD. Various studies have found significant relationships between TEI and life satisfaction (Petrides, Pérez-González, & Furnham, 2007), subjective well-being (Schutte & Malouff, 2011), and happiness (Chamorro-Premuzic, Bennett, & Furnham, 2007). Additionally, individuals with higher levels of TEI tend to demonstrate a strong ability to attend to emotional information (Mikolajczak, Petrides, & Hurry, 2009), understand and express emotions (Dawda & Hart, 2000), and utilize healthy coping styles to effectively manage affect-laden informational content (Mikolajczak, Nelis, Hansenne, & Quoidbach, 2008). One's sense of strong emotional self-efficacy, or higher levels of TEI, naturally transitions into an individual's capacity to demonstrate and experience dispositional mindfulness in daily living.

Mindfulness

Mindfulness is understood in English through the integration of the Pali words *sati* and *sampajaña*, which can be translated as awareness, discernment, circumspection, and retention (Shapiro & Carlson, 2009, p. 4). The underlying meaning put forth through various, yet congruent, definitions of mindfulness is to consciously attend to what is transpiring in one's present moment experience with discernment (Wallace & Bodhi, 2006). Mindfulness involves two essential components: mindful awareness and mindful practice.

For the purposes of this study, the primary focus was on mindful awareness, as this is conceptualized as a general way of being in day-to-day living, involving a dispositional stance toward acceptance of the present moment and willingness to relate to all internal and external experiences--positive, negative, or neutral--in a centered, calm, and receptive manner. This basic attitude typifies trait mindfulness and may ultimately provide one with the potential to look upon the seemingly ingrained patterns of self and others with unclouded awareness and a willingness to let go of attempts to change aspects of reality in ways that increase unnecessary suffering (Ciarrochi & Blackledge, 2006). The cultivation of these aspects of mindful awareness is valuable to all humans, as learning to see one's experience through the lens of mindfulness directly impacts how one perceives and frames the present moment, thus generating the individual's subjective experience of reality (Shapiro & Carlson, 2009).

Mindful awareness can be strengthened through mindful practice, such as mindfulness meditation (Cahn & Polich, 2006). Research suggests that mindfulness meditation training has the potential to result in increased levels of dispositional or trait-

like levels of mindfulness (e.g. Thompson & Waltz, 2007; Brown & Ryan, 2003). Murphy and colleagues (2012) demonstrated the developmental and cognitive capacity for undergraduate students ($n = 441$) to develop dispositional mindfulness in their study on the relationships between dispositional mindfulness, physical health, and health behaviors. Results indicated that undergraduate students with higher levels of trait mindfulness endorsed overall higher levels of sleep quality, physical health, and healthy eating habits than participants with lower levels of trait mindfulness (Murphy et al., 2012). Consistent with previous studies (Brown & Ryan, 2003; Howell et al., 2008), data analyses indicated bidirectional relationships between health behaviors and mindfulness, suggesting that directionality between mindfulness and health behaviors is complex and worthy of further investigation (Murphy et al., 2012).

Mindfulness can be considered a state of consciousness as well as a trait, wherein some individuals demonstrate a general proclivity toward experiencing and expressing mindfulness in their daily lives. In fact, studies examining the biological foundation of higher levels of trait mindfulness indicate that trait "mindfulness is associated with differential brain activation during emotional processing" (Schutte & Malouff, 2011, p. 1116). The concept of trait mindfulness is considered a general way of being that is readily apparent--whether observed or experienced--and can be applied to all aspects of daily living through deliberate use of conscious awareness (Kostanski & Hassed, 2008). When conceptualized in this manner, "mindfulness exists on a dispositional trait continuum, which can be enhanced or cultivated through meditation practice and mindfulness-based . . . therapy techniques" (Jones, Welton, Oliver, & Thoburn, 2011, p. 357). Brown and Ryan (2003) considered trait mindfulness to be a naturally occurring

characteristic made evident by the frequency with which the individual experiences mindful states of awareness. Trait mindfulness is considered to be a quality within the capacity of all individuals, with natural variation throughout the population. According to Bishop and colleagues (2004), mindfulness can be consciously (i.e., deliberately) developed in individuals naturally low in trait mindfulness and further strengthened in those with a naturally high proclivity toward trait mindfulness through regular meditation practice. This practice is thought to result in the ability to consciously enter into a state of mindfulness with greater ease and frequency, allowing the individual to respond to emotionally evocative stimuli with greater skill and ease (Bishop et al., 2004).

Attachment and Mindfulness

Research indicates that levels of mindfulness can be significantly increased through meditation and mindfulness-based training programs (Baer et al., 2008; Falkenström, 2010). Interestingly, while mindfulness can be strengthened through practice and education, various studies have found individual differences in mindfulness levels in those without any prior experience with meditation or mindfulness-based training (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Brown et al., 2007; Cordon & Finney, 2008; Thompson & Waltz, 2007). Given these inherent individual differences in levels of mindfulness among people without any prior experience with mindfulness-based practices, Brown and colleagues (2007) suggested that mindfulness may be conceptualized as an inherent proclivity or dispositional trait.

A recent study by Goodall, Trejnowska, and Darling (2012) set out to investigate the possible correlates of dispositional mindfulness in a sample of non-meditating individuals (n = 192) to understand "how specific aspects of emotion regulation, [a

component of emotional intelligence], and attachment might be related to individual differences in particular aspects of dispositional mindfulness" (p. 623). These researchers noted that previous studies have established a relationship between low levels of attachment anxiety and high levels of mindfulness (Walsh, Balint, Smolira, Fredericksen, & Madsen, 2009) and found a positive relationship between secure attachment and high levels of mindfulness (Cordon & Finney, 2008), although a potential limitation of these studies is their inclusion of participants with meditation experience or lack of knowledge regarding meditation experience. These studies may be confounded by other research indicating that interpersonal interactions with attachment figures experienced as security enhancing may actually increase the individual's capacity for mindfulness (Shaver, Lavy, Saron, & Mikulincer, 2007).

Goodall and colleagues (2012) utilized the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006), the Experiences in Close Relationships Questionnaire--Revised (ECR-R; Fraley et al., 2000), and the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The FFMQ was selected as the instrument of choice because it is considered the most current and comprehensive measure of mindfulness, which integrates components measured by five mindfulness questionnaires (Goodall et al., 2012). The ECR-R measures adult attachment based on the two continuous dimensions of attachment-related avoidance and attachment-related anxiety, with higher levels of avoidance or anxiety indicating increasing levels of insecure attachment. The DERS is a self-report measure that assesses six aspects of emotion regulation, with higher scores suggesting increasing difficulties with emotion regulation.

Goodall et al. (2012) disseminated these surveys online and recruited participants through university advertisements and opportunity sampling. Their initial sample consisted of 199 individuals (mean age = 26.6; 84% female). The final sample included 192 participants, as 5 were excluded due to reporting that they meditated regularly, and 2 were excluded as outliers based on examination of scatterplots. Data analysis indicated significant overlap between total scores on the DERS and the FFMQ, with total scores on the DERS predicting 46% of the variance in the FFMQ (r = .68). Analyses also suggested moderate negative correlations between mindfulness and attachment-related anxiety (r = .42) and attachment-related avoidance (r = .33). These findings are relevant to this author's study, as it demonstrates a strong relationship with emotional regulation and mindfulness as well as relationships between mindfulness and insecure attachment. Although EI was not investigated in their study, emotional regulation was examined, which has been viewed as a facet of EI (Goodall et al., 2012). Goodall and colleagues' (2012) study differs from this author's study in that the potential moderating role of trait mindfulness on the relationship between attachment levels and TEI levels was not examined.

Mindfulness has the potential to impact not only the well-being of the individual, but also that of the individual within an interpersonal context, such as a romantic relationship. Studies have found a positive correlation between trait mindfulness and both romantic relationship and marital satisfaction (Barnes et al., 2007), although these studies did not explore the mechanisms of action involved. Jones and colleagues (2011) sought to explore the potential mediating role of secure spousal attachment on the relationship between trait mindfulness and marital satisfaction. Trait mindfulness has

been positively correlated with empathy (Dekeyser, Raes, Leijssen, Leysen, & Dewulf, 2008) and emotion skills, which are both correlates of secure attachment (Hamarta et al., 2009). The concept of affect attunement (i.e., an alignment or sharing of internal states within an interpersonal context) is correlated with secure attachment (Haft & Slade, 1989) and theoretically connected to mindfulness (Siegel, 2007).

Seeing as past research has shown attachment style to be changeable within marital relationships (Davila et al., 1999), Jones and colleagues (2011) were interested in the possibility that "the impact of trait mindfulness on spousal attachment may affect marital satisfaction despite original attachment styles with one's caregiver" (p. 358). Results suggested a significant relationship between marital satisfaction and trait mindfulness, with a significant amount of the variance explained by the level of felt security experienced as a result of feeling dependent on and close to one's partner. Findings provided preliminary support for spousal attachment serving a role as the mechanism by which trait mindfulness may strengthen marital satisfaction (Jones et al., 2011).

Mindfulness has been shown to moderate the effects of attachment-related anxiety on stability in romantic relationships by buffering or protecting relationships from the increased risk of relationship dissolution associated with high levels of attachment-related anxiety (Saavedra, Chapman, & Rogge, 2010). Saavedra and colleagues (2010) used Mikulincer et al.'s (2003) model of attachment system activation as a foundation upon which to test their hypotheses regarding the potential moderating roles of adaptive (mindfulness) and maladaptive (hostile conflict) processes on the relationship between attachment and relationship outcomes. According to the attachment system activation

model, individuals with anxious or avoidant attachment styles tended to engage in negative relationship behaviors when the attachment system was triggered by a threatening stimulus. Unfortunately, even ambiguous or innocuous exchanges with one's partner had the potential to be interpreted as threatening for insecurely attached individuals and often served as the impetus for the threatened partner to engage in behaviors that were detrimental or harmful to the relationship (Mikulincer et al., 2003).

Based upon the model of attachment system activation, Saavedra and colleagues (2010) posited that mindful individuals (regardless of attachment style) might be more adept at interpreting potentially threatening behaviors or interactions with their partners due to a greater proclivity toward awareness, nonjudgment, and acceptance of events as they occur in the present moment. They asserted that "mindfulness might prevent attachment system activation by fundamentally altering perceptions of negative behaviors so that they are not automatically seen as threatening to the relationship" (Saavedra et al., 2010, pp. 381-382).

Results indicated a significant two-way interaction between attachment anxiety and mindfulness when predicting relationship dissolution, indicating that individuals who reported low levels of mindfulness and high levels of attachment anxiety were at greater risk for relationship dissolution, whereas attachment anxiety was unrelated to risk of relationship dissolution for those who reported higher levels of mindfulness (Saavedra et al., 2010). Findings suggested that higher levels of mindfulness have the potential to either buffer or reduce the potentially negative impact of attachment-related anxiety on relationships (Saavedra et al., 2010). However, they failed to find support for mindfulness as a moderator of the relationship between attachment-related avoidance and

relationship quality, noting that a potential limitation of their study was the relatively short period of time (i.e., 12 months) within which they assessed relationship changes.

A study by Cordon, Brown, and Gibson (2009) investigated the role of adult attachment as a possible moderator of mindfulness based stress reduction (MBSR) participation on perceived stress levels. Mindfulness based stress reduction is a manualized 8- to 10-week didactic and experiential program that focuses on teaching individuals how to use mindfulness skills in their daily lives to manage levels of stress more effectively (Kabat-Zinn, 1990). A variety of studies have indicated that participation in MBSR is significantly related to stress reduction in both clinical and non-clinical populations, although little research has been done to identify individual differences among people more likely to benefit from such mindfulness-based interventions. Past research indicates that secure attachment is associated with greater stress resiliency than insecure attachment, which is associated with greater stress vulnerability (Ditzen, Schmidt, Strauss, Nater, Ehlert, & Heinrichs, 2008). It is possible that insecurely attached adults may receive greater benefits than securely attached individuals from mindfulness-based programs, such as MBSR, as they may begin the program with higher levels of stress. However, as MBSR is a group-based program that involves a considerable amount of socialization and interpersonal interactions, it is possible that insecurely attached individuals may find the program itself to be inherently stressful and either drop out or experience an insignificant amount of stress reduction as a result (Cordon et al., 2009).

Findings indicated that insecurely attached adults were twice as likely as securely attached adults to drop out of the MBSR program (18% vs. 9%), with the authors

suggesting that insecurely attached adults who are willing to complete the program may have derived even greater stress reduction benefits than securely attached adults (Cordon, et al., 2009). Both the insecure (n = 66) and secure (n = 65) groups demonstrated significant decreases in levels of perceived stress upon completion of the program, with the insecure group reporting slightly lower perceived stress levels. This study provides support for the efficacy of MBSR, a mindfulness-based training program, across attachment styles, with insecurely attached individuals reporting slightly greater levels of stress reduction. These findings lend additional support for the positive relationship between attachment and mindfulness.

Research suggests three potential connections with a sense of felt security (i.e., secure attachment) and mindfulness (Mikulincer & Shaver, 2007). First, individuals who have been the recipients of attentive, sensitive, and responsive parenting are likely to be both securely attached and demonstrate higher levels of mindfulness than people who did not receive this form of caregiving. Second, the relationship between the two processes of felt security and mindfulness may be bidirectionally related; secure attachment tends to cultivate greater attention to relational partners, while mindfulness is likely to facilitate development of secure attachment by lending an attitude of receptive attention toward one's relationship partners (Ryan, Brown, & Creswell, 2007). Third, secure attachment and mindfulness seem to contribute to a wide variety of positive developmental outcomes.

Mikulincer and Shaver (2007) explained that past relationships with secure attachment figures increase one's mindfulness by a process of internalizing and identifying with attachment figures, which enables the development of useful self-

soothing techniques. Their concept, based on psychoanalytic thought, proposed that individuals who have experienced regular comforting and encouraging interactions with secure attachment figures will be inclined to internalize these positive interactions and consequently view themselves as similarly supportive, encouraging, and soothing. For these securely attached individuals, the idea is that they will be adept at recollecting those positive memories and emotions during future moments of demoralization or stress. People who have internalized experiences from interactions with secure attachment figures appear to have a greater coherence of mind and discourse, which makes it easier to be mindful of their experiences and understand both their own and others' needs. Mikulincer and Shaver (2007) concluded that this interactive process with supportive attachment figures ultimately builds and maintains genuine self-esteem, the potential for mindfulness, and the ability to regulate emotions.

Saron and Shaver (2006) investigated the relationship between mindfulness and attachment in a sample of 70 adults who had volunteered to participate in one of two three-month-long meditation retreats. Half of the sample was assigned to the treatment group, and the other half was assigned to a waitlist control group (i.e., told they were waiting to participate in an upcoming three-month-long retreat). Inclusion criteria for Saron and Shaver's (2006) study involved previous meditation experience, an expressed desire for further meditation training, and confidence in the ability to survive the length of the retreat. Researchers used the FFMQ (Baer et al., 2006) and the Experiences in Close Relationships scale (ECR) (Brennan et al., 1998) as instruments to assess overall mindfulness and attachment-related anxiety and avoidance.

Saron and Shaver's (2006) findings indicated that attachment-related anxiety was significantly related to lower scores on three of the FFMQ subscales (nonreactivity to inner experience, nonjudging of experience, and acting with awareness), while attachment-related avoidance significantly impacted all five mindfulness facets. Overall, the two attachment dimensions accounted for 42% of the variance in overall mindfulness scores, illustrating that anxiously attached participants struggled to maintain a nonjudgmental and nonreactive attitude toward their present-moment experience and avoidant participants tended to be less mindful overall (Saron & Shaver, 2006). The current study differs from that of Saron and Shaver (2006) in several ways: (a) meditation experience was not an inclusion criterion; (b) experiential activities (e.g., participation in three-month-long meditation retreats) were not involved; (c) self-reported levels of the constructs were assessed via online survey methods; and (d) the target population was undergraduate students at least 18 years of age. Just as adults with higher levels of attachment-related anxiety and avoidance may experience difficulties with connecting to their present-moment experiences in an open and nonjudgmental manner, it follows that these adults may also struggle to effectively relate to emotional experiences.

Attachment and Emotional Intelligence

Research by Hamarta and colleagues (2009) found a significant positive correlation between adults with a secure attachment style and all five composite dimensions of EI abilities. Their results suggested that attachment styles, as measured by the Relationships Scales Questionnaire (RSQ; Griffin & Bartholomew, 1994), significantly explained levels of EI and that a secure attachment style was predictive of all sub-dimensions of EI (intrapersonal intelligence, interpersonal intelligence,

adaptability, stress management, and general mood), as measured by the Bar-On Emotional Quotient Inventory (EQ-I; Bar-On, 2006). Findings suggested that not only did a secure attachment style predict overall levels of EI, but specifically intrapersonal EI abilities, suggesting that securely attached individuals had more positive traits that impacted intrapersonal functioning, such as self-esteem or self-awareness, than insecurely attached individuals.

Overall results from this study (Hamarta et al., 2009) confirmed past research connecting secure attachment with greater levels of overall well-being than insecure attachment styles (Sable, 2007). Results are also consistent with past research indicating significant relationships between secure attachment and perception, understanding, facilitating, and management of emotions (Kafetsios, 2004; Kim, 2005; Peck, 2003; Zimmermann, 1999). While Hamarta and colleagues' (2009) specific focus was on the assessment of EI as an ability (cognitive domain), as opposed to a trait (personality domain), the significant overlap between aspects of ability EI and TEI lend relevance to the current study. Schutte and Malouff (2011) noted the divergence in the EI literature between ability EI and TEI, often distinguishing these constructs as mutually exclusive, even though aspects of each have the potential to provide complementary aspects of overall adaptive emotional functioning. In fact, "higher levels of emotional intelligence, both measured as a trait and as an ability, have been found to be associated with various positive outcomes, and especially with indices of subjective well-being such as positive affect and life satisfaction" (Schutte & Malouff, 2011, p. 1117).

Just as attachment style may be predictive of multiple aspects of EI, there is also a strong connection between these two constructs and satisfaction in romantic

relationships. Couples who report high relationship satisfaction are less likely to dissolve the relationship or avoid discussion of relationship problems and are more likely to rate their partners as high in TEI (Smith, Heaven, & Ciarrochi, 2008). The study examined TEI, relationship satisfaction, and conflict communication patterns amongst 82 cohabiting heterosexual couples. Researchers were specifically interested in the extent to which relationship satisfaction could be predicted by self-reported estimates of partners' levels of TEI and perceptions of patterns of communication during conflict. They were concerned with collecting this data from each member of the romantic dyad, as opposed to one partner, with the intention of yielding a more holistic view of the perceptions within the relationship.

Smith, Heaven, and Ciarrochi (2008) administered the Trait Emotional Intelligence Questionnaire--Short Form (TEIQue-SF) (Petrides & Furnham, 2006) to participants in two forms, one to rate their own level of TEI and another to rate their perception of their partners' level of TEI. Participants filled out two other self-report instruments, the Communication Patterns Questionnaire (Christensen & Sullaway, 1984) and the Perceived Relationship Quality Components (Fletcher, Simpson, & Thomas, 2000), to assess the extent to which participants utilized certain interaction strategies during relationship conflicts and participants' levels of relationship satisfaction/quality, respectively. Results indicated that couples with the highest levels of satisfaction did not avoid discussion of relationship-related conflicts, rated their partners as higher in TEI, and perceived significant similarities between their own levels of TEI and that of their partners (Smith, Heaven, & Ciarrochi, 2008).

Relationship satisfaction involves more than security in each partner's willingness to openly discuss relationship problems and perceived similarities between one another's levels of TEI. According to Brotto and Klein (2010), it also involves a secure and healthy bond of sexual intimacy. High trait EI scores, as assessed by the TEIQue (Petrides & Furnham, 2006), indicated lower levels of sexual dysfunction and higher levels of sexual satisfaction in women (Brotto & Klein, 2010). Attachment-related problems in early childhood relationships with parents or primary caregivers may lead to significant problems with romantic intimacy as an adult. Brotto and Klein's (2010) study lent further support to the relationship between secure attachment and EI by illustrating the potential for attachment-related problems in childhood to lead to both difficulties in romantic relationships and lower levels of EI.

While adult attachment style and EI significantly impact romantic relationships, they also affect the adaptive nature of interpersonal exchanges in other contexts, including vocation, clinical, and counseling settings (Petrides, 2009). Morrison (2007) sought to identify potential implications of EI within the field of social work, noting the ways in which "emotional intelligence . . . is one of the cornerstones for effective social work teaching, practice, [and] management" (p. 246). Components of attachment theory place importance on using emotions as sources of information, with uncomfortable emotions providing insight into potential threats that subsequently require one's attention and accurate appraisal (Siegel, 1999). Unawareness, suppression, or inaccurate identification of one's internal emotional states have the potential to result in blindness to relevant information regarding possible dangers, including maladaptive intrusions from

one's internal emotional experience, that may distort the capacity for effective observation and assessment within the work environment (Morrison, 2007).

Morrison (2007) demonstrated the clear value in workers' capacities to effectively comprehend the meaning behind emotions in others and themselves in order to competently make and evaluate observational data. Other aspects related to the importance of EI in the work environment include engagement (rapport-building), decision-making (regarding the impact of mood and emotion regulation on effective decision-making), collaboration, and cooperation as well as stress management, cultivating resilience, and utilization of effective coping strategies. Morrison's (2007) discussion on the importance of EI and its connections with attachment theory has the potential to extend beyond the social work context towards other vocational settings and interpersonal effectiveness between coworkers in general. Many aspects of EI, such as effective coping with unpleasant emotions, naturally relate to the concept of mindfulness, which involves directing an attitude of acceptance toward all aspects of present moment experience.

Mindfulness and Emotional Intelligence

Past research has demonstrated relationships between TEI and subjective well-being (Schutte & Malouff, 2011) and happiness (Chamorro-Premuzic et al., 2007). Other studies have found that individuals with high TEI scores tended to express a higher ability to attend to emotional information (Mikolajczak et al., 2009), understand and express emotions (Dawda & Hart, 2000), utilize healthy coping styles, and manage affect-laden informational content (Mikolajczak et al., 2008). These qualities of individuals with higher levels of TEI are similar to some of the qualities expressed by

individuals with a proclivity toward trait mindfulness. For example, individuals with higher levels of trait mindfulness tend to display strong abilities to accept thoughts and feelings in daily living (Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007), adeptness in the observation and description of changing emotional states (Baer, Smith, & Allen, 2004), and a tendency to utilize the healthy coping style of directing acceptance toward unpleasant emotions (Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2007).

Research suggests that particular aspects of mindfulness and emotion regulation (a component of EI) may overlap (Siegel, 2007). It is possible that metacognition of emotions shares the common antecedent of a secure and supportive emotional bond with a caregiver in early childhood. Awareness or recognition of one's internal emotional state may be a facet of trait mindfulness connected to both attachment and emotion regulation (Goodall et al., 2012). Given these general research findings, it is clear that there are valuable and significant relationships between mindfulness and various aspects of EI.

Schutte and Malouff (2011) were interested in the extent to which EI mediated the relationship between mindfulness and subjective well-being. Results based on a sample of university students (n = 125) indicated that higher levels of both trait mindfulness and TEI were significantly related to greater life satisfaction, greater positive affect, and less negative affect. The theoretical basis for testing this mediation model is that "the core attentional and non-judgmental aspects of mindfulness may facilitate the development of greater [TEI] and that the adaptive intra- and interpersonal functioning inherent in [TEI] may lead to greater well-being" (Schutte & Malouff, 2011, p. 1118). Overall findings suggested that mindfulness lead to increased TEI, providing valuable information into

one process by which mindfulness may provide positive effects. Schutte and Malouff (2011) purported that mindfulness training has the potential to provide individuals with a practical method by which they can increase levels of TEI.

Lykins and Baer (2009) investigated differences in aspects of psychological well-being between meditators and non-meditators and found that meditators tended to report generally higher levels of mindfulness, overall well-being, and self-compassion, as well as lower levels of distressing psychological symptoms such as fear of emotion, emotion regulation difficulties, rumination, and thought suppression than the non-meditator group. These findings lend support to previous studies that found positive relationships between mindfulness meditation practices and overall psychological well-being. Results suggested that the strength of increases in these variables was linearly connected with the consistency and length of meditation practice, indicating a significant relationship between mindfulness and EI.

CHAPTER III

METHODOLOGY

This study examined the potential moderating role of trait mindfulness on the relationships between trait emotional intelligence (TEI) and both attachment-related avoidance and anxiety in close relationships. Prior to the current study, I conducted a pilot study that examined this area in a similar manner on which the current study further built. Appendix A provides a description of the methods, results, and discussion from the pilot study.

Participants

The target population for this study included students over 18 years of age. The sample in this study consisted of 510 participants who completed the entire survey; respondents were asked to respond to each item in order to complete the survey, eliminating the presence of missing data. Table 1 provides a description of the following demographic variables: age, sex, race, current college classification, and regular mindfulness meditator status. Participants were primarily within the 18-20 age range (n = 195, 38.2%), followed by the 21-24 age range (n = 100, 19.6%). The majority of participants, 390 (76.5%), were female. Most participants identified themselves as Caucasian (n = 337, 66.1%). Regarding college classification, 346 participants (67.8%) were undergraduate students, and 133 (26.1%) were graduate students. The remaining 31 (6.1%) participants endorsed the college classification category "other." Participants

consisted of 144 (28.2%) regular meditators and 366 (71.8%) non-meditators. Of the 510 participants, 103 (20.2%) elected to participate in the random prize drawing for an iTunes gift card. After all data were collected, three of these 103 participants were randomly selected and notified by e-mail of their award in the form of a code number redeemable for a $15 iTunes gift card. See Table 1 for more detailed demographic data.

Table 1

Summary of Demographic Variables

Variables	Category	*N* (510)	%
Gender	Male	118	23.1
	Female	390	76.5
	Other	2	0.4
Age	18–20	195	38.2
	21–24	100	19.6
	25–29	66	12.9
	30–34	50	9.8
	35–39	27	5.3
	40–44	20	3.9
	45–49	15	2.9
	50–54	19	3.7
	55–59	13	2.5
	60–64	5	1.0
Race	Caucasian	337	66.1
	Black / African-American	21	4.1
	Hispanic/Latino(a)	84	16.5
	Native American / Alaskan Native	4	0.8
	Asian	23	4.5
	Native Hawaiian / Pacific Islander	1	0.2
	Multiple races	35	6.9
	Other	5	1.0
College	Freshman	92	18.0
	Sophomore	71	13.9
	Junior	82	16.1
	Senior	101	19.8
	Graduate student	133	26.1
	Other	31	6.1
Mindfulness meditation	Yes	144	28.2
	No	366	71.8

Note. Mindfulness mediation is defined as "A technique of meditation in which distracting thoughts and feelings are not ignored, but are rather acknowledged and observed nonjudgmentally as they arise to create a detachment from them and gain insight and awareness" by Mosby, 2009, *Mosby's Medical Dictionary*, 8th ed.

Procedure

The sample pool was obtained using a nonprobability convenience sample of students from three universities in the United States and students recruited through the

professional website LinkedIn. The Carnegie Classification system describes the "undergraduate profile" of the three universities of interest as follows: FT4/MS/LT1, MFT4/S/HTI, and FT4/S/HTI. The undergraduate profile (FT4/MS/LT1) of the first university, located in the New England region of the U.S., indicates that it is a full-time four-year, more selective, lower transfer-in university. The second university's (located in the southwest region) undergraduate profile (MFT4/S/HTI) is indicative of a medium full-time four-year, selective, higher transfer-in institution. The undergraduate profile (FT4/S/HTI) of the third university, located in the Rocky Mountain region, describes a full-time four-year, selective, higher transfer-in university. Universities are categorized as "full-time" if at least 80% of undergraduates meet full-time enrollment status. Selectivity is based on analysis of test score data for first-year students; "more selective" institutions admissions criteria place them in approximately the top fifth of baccalaureate institutions, whereas "selective" institutions admissions standards places them in approximately the middle two-fifths. Universities described as "higher transfer-in" have entering undergraduate groups composed of at least 20% transfer students; "lower transfer-in" universities have less than 20% of entering undergraduates as transfer students.

Participants were recruited through e-mail dissemination of links to the complete survey packet to professors and students at the three afore-mentioned universities of interest. Students were randomly recruited via public student e-mail addresses and were provided with an invitation to participate in this study and a link to the surveys. Participants were also recruited through advertisement of the study and survey link on the professional website LinkedIn's groups specifically related to higher education.

Professors were contacted via e-mail or through LinkedIn and were invited to send the survey invitation to their current students.

Based on Green's (1991) guidelines for multiple regression analysis for an observational study, the sample size should be at least 119 participants. This sample size was determined based on a medium effect size, a power of .8, and an alpha level of .05. According to Green (1991), the formula $N \geq 104 + m$ (m = number of explanatory variables) can be used as a general rule of thumb to test individual explanatory variables. This information was determined based on the use of five explanatory variables: attachment-related anxiety and attachment-related avoidance, mindfulness, and two product variables. In order to test the moderator effect of trait mindfulness, two product variables were created: (1) attachment-related anxiety with overall trait mindfulness, and (2) attachment-related avoidance with overall trait mindfulness. If current methods for obtaining participants had yielded too small of a sample, attempts would have been made to recruit additional participants via e-mail or advertisement of the study.

Participants were recruited by disseminating links to the complete survey packet (all materials) online through use of Survey Monkey. Participants first read the informed consent and then accessed the survey. This cross-sectional non-experimental study involved a one-time online administration of demographic questions (see Appendix B) to assess the representativeness of the sample pool to the target population and three self-report survey instruments: (a) Experiences in Close Relationships Scale--Revised (ECR-R; Fraley et al., 2000) (Appendix C); (b) Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006) (Appendix D); and (c) Trait Emotional Intelligence Questionnaire--Short Form (TEIQue-SF; Petrides & Furnham, 2006) (Appendix E). These three self-

report survey instruments and individual items within each instrument were presented in a random order to each participant to control for a possible order effect. Haugtvedt and Liu (2010) report that in survey research, both question and response order effects have the potential to impact the validity of survey data, lending importance to presenting the afore-mentioned scales and individual items within those scales in a random order. All participants read the electronic consent form (see Appendix F) prior to participation. The study was conducted following Institutional Review Board (IRB) approval from the researcher's university (see Appendix G). The complete online survey packet consisted of a total of 111 items; start and end time data collected through Survey Monkey indicated an average completion time of 18 minutes. To prevent missing data, the online survey required participants to respond to all of the questions to complete the survey.

Compensation was offered for participation in this study through the option to be entered in a random drawing for one of three iTunes gift cards, each worth $15. Participants were required to submit their e-mail address to be entered in this drawing; they were notified that their e-mail address would not be used to identify their responses to survey items, nor would it be distributed or used for any other purposes, aside from possible notification of winning the gift card following data collection. Potential costs to participants included time and energy associated with responding to the self-report measures involved in this study.

Instruments

Experiences in Close Relationships Scale--Revised

The Experiences in Close Relationships Scale--Revised (ECR-R; Fraley et al., 2000) is a 36-item self-report questionnaire designed to measure adult attachment levels

in close relationships in terms of attachment-related anxiety and avoidance, with low scores on each of these dimensions reflecting an increasingly secure attachment level. The ECR-R has two subscales (i.e., attachment-related anxiety and avoidance) that consist of 18 items each, with a possible range of scores from 18 to 126 (Fraley et al., 2000). Participants were asked to rate the degree to which they agreed that each statement described their experiences in past or present close relationships, as represented on a 7-point Likert-type scale (*1 = strongly disagree, 7 = strongly agree*). Regarding reverse-scored items, the anxiety subscale contains 2, and the avoidance subscale contains 12. The two subscales are treated as continuous orthogonal variables, with each subscale scored by summing the item responses (after taking reverse-scored items into consideration) for attachment-related anxiety and avoidance; higher scores on each subscale indicate greater endorsement of the measured construct (i.e., anxiety and avoidance).

Fraley and colleagues (2000) developed the ECR-R based on Brenna et al.'s (1998) Experiences in Close Relationships questionnaire by utilizing principles of item-response theory. The original 323 items collected by Brennan and colleagues (1998) underwent a series of statistical procedures (e.g., principal-axis factor analysis) that resulted in 30 clusters. Items selected based on item-response theory were found to contain a notably higher degree of information than the original ECR scales. Ultimately, 18 items with the highest discrimination values were selected from the ECR Anxiety and Avoidance scales, with the ECR-R incorporating 13 of the 18 items from the ECR Anxiety scale and seven of the 18 items from the ECR Avoidance scale (Fraley et al., 2000).

While the ECR-R scales demonstrate marked improvement over the original ECR scales, one limitation is that the ECR-R scales are less adept at assessing high levels of attachment security (i.e., low levels of attachment-related anxiety and/or avoidance) than levels of attachment insecurity. This limitation is consistent with the general finding that many attachment inventories typically assess levels of attachment insecurity with greater fidelity than security (Fraley et al., 2000). A second limitation includes a certain amount of conceptual redundancy amongst many of the items, despite efforts to eliminate clearly redundant items. Fraley and colleagues (2000) noted that this limitation could be addressed through the future construction of a more diverse set of items designed to assess diverse manifestations of attachment-related traits, as opposed to highly specific manifestation of attachment-related traits.

Sibley and Liu (2004) assessed the factor structure and short-term temporal stability of the ECR-R, with a sample of undergraduate students at Time 1 (n = 197) and Time 2 (n = 199). Some individuals (n = 142) participated during both administrations. No significant differences were observed in avoidance or anxiety levels between individuals who participated solely at Time 1 or during both administrations. Separate confirmatory and factor analyses suggested that the ECR-R is a replicable and reliable self-report measure of levels of attachment-related anxiety and avoidance in adult romantic attachment. Within Sibley and Liu's (2004) sample of undergraduate students, psychometric properties of the ECR-R yielded excellent internal consistency levels for the avoidance (α = .93) and anxiety (α = .95) subscale scores.

Fairchild and Finney (2006) investigated the validity of the ECR-R within a sample of undergraduate students (N = 397) through confirmatory factor analyses

intended to test factor structures that may underlie certain responses to given variables (i.e., attachment-related anxiety and avoidance levels). Predicted relationships between the ECR-R and other relevant instruments were assessed to demonstrate the validity of the ECR-R. These instruments included: Touch Scale (Brennan, Wu, & Loev, 1998); UCLA Loneliness Scale—Version Three (Russell, 1996); Social Provisions Scale (SPS; Cutrona & Russell, 1987); and Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990). In relation to the Touch Scale subscales, to establish convergent validity, Fairchild and Finney (2006) confirmed predictions of a positive relationship between levels of attachment-related avoidance and scores from the Touch Avoidance subscale as well as a confirmed negative relationship between avoidance levels and scores on the Affectionate Proximity subscale. Regarding the relationship between attachment levels and loneliness, results indicated a positive relationship between attachment-related anxiety levels and scores on the UCLA Loneliness Scale—Version Three (Fairchild & Finney, 2006), which suggests strong convergent validity. When considering the relationship between scores on the ECR-R and social support, a negative relationship between both attachment-related anxiety and avoidance with scores on the Social Provisions Scale was uncovered. Finally, Fairchild and Finney (2006) found evidence for a positive relationship between levels of attachment-related anxiety on the ECR-R and worry (as measured by the PSWQ). In general, Fairchild and Finney's (2006) study indicated good validity evidence for scores from the ECR-R within a sample of undergraduate students.

Five Facet Mindfulness Questionnaire

The FFMQ (Baer et al., 2006) is a 39-item self-report questionnaire, with 19 reverse-scored items, designed to assess mindfulness as a multifaceted trait-like proclivity toward mindfulness in daily living in terms of: (1) observing, (2) describing, (3) acting with awareness, (4) nonjudging of inner experience, and (5) nonreactivity to inner experience. The first four subscales mentioned consist of eight items each, and the nonreactivity to inner experience subscale consists of seven items. Participants were asked to rate the degree to which each statement described their experience, as represented on a 5-point Likert-type scale (*1 = never or rarely true, 5 = very often or always true*). After reverse-scored items were taken into consideration, the five subscales were summed together and divided by the total number of items to determine participants' total scores, with higher scores reflecting higher levels of global trait mindfulness levels (Baer et al., 2006). Research suggested that the individual facet and overall scores are useful in explaining both the changes that occur as a result of long-term mindfulness practice as well as how these changes are connected to reduced psychological distress and improved functioning (Heeren, Broeck, & Philippot, 2011).

Baer and colleagues (2006) developed the FFMQ through an exploratory factor analysis of five questionnaires designed to assess mindfulness: the Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al., 2004), the Southampton Mindfulness Questionnaire (SMQ; Chadwick, Hember, Symes, Peters, Kuipers, & Dagnan, 2008), the Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001), the Philadelphia Mindfulness Scale (PHLMS; Cardaciotto et al., 2007), and the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003). This method of creating the

FFMQ allowed for items from a variety of mindfulness self-report instruments to be integrated to result in five clearly identifiable factors: (1) observing (8 items); (2) describing (8 items); (3) acting with awareness (8 items); (4) nonjudging of inner experience (8 items); and (5) nonreactivity to inner experience (7 items). Baer and colleagues (2006) stated that the FFMQ's factors have demonstrated adequate to good internal consistency, with alpha values ranging from .75 (nonreactivity to inner experience) to .91 (describing), based on scores in a sample of 613 undergraduate psychology students.

The FFMQ is currently considered "one of the most empirically-based scales assessing mindfulness" (Heeren et al., 2011, p. 147). Pepping, Davis, and O'Donovan (2013) utilized the FFMQ with undergraduate students ($N = 572$) enrolled in an introductory psychology course to explore the potential mediating role of emotion regulation difficulties on the relationship between attachment and mindfulness levels. In this sample of undergraduate students, the FFMQ demonstrated high internal consistency ($\alpha = .81$) for the total mindfulness score (Pepping et al., 2013). A confirmatory factor analysis suggested that the FFMQ indicated incremental validity in the prediction of psychological symptoms, as assessed by the Brief Symptom Inventory (BSI; Derogatis, 1992). Haynes and Lench (2003) have stated that a given measure has incremental validity based on the extent to which that measure strengthens the ability to predict other relevant variables. Baer et al.'s (2006) demonstration of the FFMQ's incremental validity in the prediction of psychological symptoms with an undergraduate sample is relevant to the current study due to the pre-established relationships between secure

attachment levels and psychological well-being (Love & Murdock, 2004) and emotional intelligence levels and subjective well-being (Schutte & Malouff, 2011).

Trait Emotional Intelligence Questionnaire--Short Form

The Trait Emotional Intelligence Questionnaire--Short Form (TEIQue-SF; Petrides & Furnham, 2006) is a 30-item self-report questionnaire, measuring global TEI as an individual's self-perception of emotional abilities (i.e., trait emotional self-efficacy) in daily living. Participants were asked to rate each item based on the degree to which they agreed or disagreed with each statement, as represented on a Likert-type scale (*1 = completely disagree, 7 = completely agree*). The TEIQue-SF scores on any individual item can vary between 1 and 7, with a mean of 3.5. Global TEI was measured as a continuous variable, with higher scores (raw scores ranging from 30-210) indicating higher levels of global TEI, which were calculated by reverse scoring 15 of the items, summing all responses, and dividing that sum by the total number of items, for a possible range of 1 to 7.

Global TEI has been shown to adhere to a generally normal distribution, with scores falling in the top and bottom 3% of the distribution being markedly atypical. The TEI scores are interpreted based on where each score falls in the sample distribution: high (70-100%), medium (31-69%), or low (0-30%). Consistent with the personality construct orientation of TEI theory, high TEI scores are not necessarily adaptive, just as low TEI scores are not necessarily maladaptive. Petrides (2009) stated, "Very high TEIQue scores are indicative of hubris and self-promotion . . . [and] low trait EI scorers are more likely than their high-scoring counterparts to be straightforward and less likely to be affected by a need for self-verification and image management" (p. 9).

The TEIQue-SF is based on the 153-item long form of the TEIQue (Petrides & Furnham, 2006). The TEIQue assesses TEI on 15 facets, four factors, and global TEI. Facets include*:* (1) adaptability, (2) assertiveness, (3) emotion perception--self and others, (4) emotion expression, (5) emotion management--others, (6) emotion regulation, (7) impulsiveness--low, (8) relationships, (9) self-esteem, (10) self-motivation, (11) social awareness, (12) stress management, (13) trait empathy, (14) trait happiness, and (15) trait optimism. Factors include*:* (1) well-being, (2) sociability, (3) self-control, and (4) emotionality.

The main difference between the TEIQue and the TEIQue-SF is that the TEIQue measures TEI based on the 15 distinct facets, four factors, and global TEI, whereas the TEIQue-SF measures global TEI. While it is possible to derive scores on the four TEI factors from the TEIQue-SF, they tend to demonstrate lower internal consistencies (around .69) with various samples, as compared to the full form (Petrides, 2009). In development of the TEIQue-SF, two items from each of the 15 facets were selected for inclusion, based primarily upon their correlations with the corresponding total facet scores. This procedure was implemented to be sure of adequate internal consistencies of scores and broad coverage of the sampling domain of the construct (Petrides & Furnham, 2006).

Cooper and Petrides (2010) assessed psychometric properties of scores from the TEIQue-SF using item response theory with samples recruited from university campuses and the general community (Study One, $N = 1{,}119$; Study Two, $N = 866$) and found good internal consistency for global TEI scores (.89 males; .88 females). In the two studies Cooper and Petrides (2010) conducted with the TEIQue-SF, mean scores of global TEI

were 5.02 (*SD* = .73) for males and 5.18 (*SD* = .68) for females in Study One, and 5.05 (*SD* = .69) for males and 4.94 (*SD* = .67) for females in Study Two. Research with the TEIQue by Mikolajczak, Luminet, Leroy, and Roy (2007) found excellent internal consistency for global TEI scores (.94--males; .95--females) in a sample of undergraduate students (*n* = 484) and adults from the community (*n* = 256). They also found that the TEIQue demonstrated evidence of criterion validity, with scores predicting anxiety, depression, and social support, as well as incremental validity to predict emotional reactivity over social desirability, alexithymia, and the five-factor model of personality.

Demographic Questions

Consistent with the pilot study, the electronic survey packet included basic demographic questions, as adapted from the U.S. Census Bureau (2010). Questions assessed a variety of descriptive variables including: age, sex, ethnicity, relational status, education level, and regular mindfulness meditator status (see Appendix B). Participants were classified as "regular meditators" according to Baer et al.'s (2008) inquiry into individuals' self-report of engaging in a "currently ongoing meditation practice . . . of at least once or twice a week" (pp. 331-332).

Data Analysis

The independent (explanatory) variables were attachment-related avoidance and attachment-related anxiety in close relationships, the moderating variable was overall trait mindfulness, and the dependent (outcome) variable was global TEI. Attachment levels in close relationships were assessed as continuous variables, based on the degree to which participants endorsed items indicative of attachment-related anxiety or avoidance. Results of the ECR-R were conceptualized and interpreted within the framework of

Brennan et al.'s (1998) two orthogonal continuous dimensions of attachment-related anxiety and avoidance that can also be used to describe Bartholomew and Horowitz's (1991) four-category framework of adult attachment style; however, the attachment "styles" are understood as regions in a two dimensional space. While this study was interested in overall trait mindfulness through analysis of participants' overall FFMQ scores, scores on each of the five FFMQ facets were also derived to provide the opportunity for additional insight on the roles of these specific aspects of mindfulness. In accordance with recent research (Peters, Eisenlohr-Moul; Upton, & Baer, 2013) using the FFMQ, this study mean-centered the five subscale scores prior to analysis.

Once data were collected, SPSS (version 21, Macintosh OS X 10.8.4) was used to calculate descriptive and frequency statistics to gather information from the demographic questions (Table 1). An alpha level of .05 was used throughout this study. Bivariate correlations were examined to assess relationships between continuous variables and reliability analyses (i.e., Cronbach's alpha) were performed to assess internal consistency properties for this sample (Table 2). Internal consistency was estimated using Cronbach's (1951) alpha to describe the extent to which responses to items within scales and subscales used in this study were responded to in a consistent manner.

Table 2

Descriptive Statistics and Pearson Correlations of Continuous Variables

	1	2	3	4	5	6	7	8	9
1. Anxious	-								
2. Avoidant	.51**	-							
3. Observe	-.09	-.06	-						
4. Describe	-.33**	-.32**	.34**	-					
5. Aware	-.34**	-.26**	.11*	.34**	-				
6. Nonjudge	-.43**	-.33**	.03	.30**	.42**	-			
7. Nonreact	-.30**	-.19**	.36**	.40**	.31**	.38**	-		
8. Mindful	-.48**	-.36**	.53**	.73**	.67**	.68**	.71**	-	
9. TEI	-.57**	-.44**	.26**	.59**	.57**	.52**	.58**	.76**	-

	α	*M*	*SD*
1. Anxious	.94	3.30	1.33
2. Avoidant	.95	2.86	1.19
3. Observe	.82	3.62	0.75
4. Describe	.90	3.51	0.83
5. Aware	.87	3.12	0.77
6. Nonjudge	.91	3.08	0.92
7. Nonreact	.82	3.12	0.71
8. Mindful	.92	3.30	0.53
9. TEI	.90	5.14	0.78

Note. $N = 510$. 1 = ECR-R Attachment Anxiety subscale; 2 = ECR-R Attachment Avoidance subscale; 3 = FFMQ Observing subscale; 4 = FFMQ Describing subscale; 5 = FFMQ Acting with Awareness subscale; 6 = FFMQ Nonjudging of Inner Experience subscale; 7 = FFMQ Nonreactivity to Inner Experience subscale; 8 = FFMQ overall Mindfulness; 9 = TEIQue-SF Global TEI.
*$p < .05$.
**$p < .01$.

A hierarchical multiple regression analysis was used to determine the direction and strength of the relationship between attachment levels and TEI levels and the potential moderating effect of trait mindfulness levels on the relationship between attachment levels and TEI levels. According to Gall, Gall, and Borg (2007), this type of analysis was appropriate in determining the correlation between a criterion variable (i.e., the variable being explained: TEI) and a combination of two more explanatory variables (i.e., mindfulness as a moderating variable, attachment levels as explanatory variables, and two product variables).

Before conducting the hierarchical regression, the assumptions for the procedure should be tested. The following basic assumptions inherent to multiple regression analyses were tested: normality of residuals, independence of observations, and constant variance (Pallant, 2010). In addition, the assumption of minimal multicollinearity was

assessed through consideration of variance inflation factors (VIF). A VIF allows for quantification of the degree to which parameter estimate standard errors are inflated. In general, VIFs greater than 4 suggest a need for further investigation, whereas VIFs greater than 10 indicate severe multicollinearity (O'Brien, 2007). While VIFs beyond the threshold value of 10, or even as high as 40, do not necessarily nullify regression analysis results, O'Brien (2007) stated that VIFs of such magnitude may require the elimination of independent variable(s) from the regression analysis or combining similar independent variable(s) into one index. The assumption of minimal multicollinearity was assessed by examining the correlation matrix, with correlations greater than .90 suggesting collinearity among the respective scales (Kline, 2011).

Glass and Hopkins (1996) noted that regression procedures involve the assumption that *Y* scores (levels of TEI) are both independent and normally distributed along all points of the regression line. This assumption of independence of observations is considered met through use of a simple random sample. The assumption of normality of residuals was tested using scatterplots, histograms, normal probability plots, and a Kolmogorov-Smirnov (K-S) test. If $p > .05$, this would indicate that the distribution of the residuals follows a normal distribution and that the assumption of normality has not been violated. The regression assumption of constant variance was assessed through use of the Breusch-Pagan test (Breusch & Pagan, 1979). This test of homoscedasticity was used to assess if the pattern of residuals demonstrates consistency across the range of predicted values. Failure to reject the null hypothesis--variance of residuals was the same for all values of the independent variable(s)--satisfied the assumption of constant

variance through use of the Breusch-Pagan test (Zaman, 2000). After the afore-mentioned assumptions were met, the hierarchical regression was conducted.

By using a single hierarchical multiple regression analysis, this study's variables of interest were entered in four blocks, allowing each independent variable (attachment-related anxiety and avoidance levels) to be assessed in regard to what they added to the explanation of the dependent variable (global TEI levels), after controlling for the effects of previously entered demographic variables (e.g., age, relational status, or regular meditator status). This analysis also allowed for the creation of product variables to test the potential moderating role of trait mindfulness and attachment levels on participants' levels of TEI. Moderator variables interacted with explanatory (predictor) variables by impacting the level of the dependent variable (Holmbeck, 1997). Two product variables (anxiety*mindfulness; avoidance*mindfulness) were entered into the regression analysis to shed light on the potential moderating role of overall mindfulness. If mindfulness proved to be a significant moderator on the relationship between attachment levels and global TEI, then the regression analysis would indicate the degree to which mindfulness interacted with attachment levels in such a way that global TEI scores were significantly impacted. Through utilization of this statistical analysis, the overall model was assessed in terms of its ability to explain variance in individuals' levels of TEI, based on attachment in close relationships and the potential interaction (moderating role) of trait mindfulness on the relationships between attachment levels and TEI (Pallant, 2010).

The multiple regression analysis provided an adjusted squared multiple correlation coefficient (R^2) for the model as a whole and for each block entered into the hierarchical regression equation (Draper & Smith, 1998). It was anticipated that the

value of adjusted R^2 would increase with each step of the hierarchical regression model; incremental changes in values of adjusted R^2 were assessed at each step (Huck, 2008). Step 1 of the hierarchical regression equation involved entering the demographic variables of interest: age, sex, race, current college classification, and regular mindfulness meditator status. In Step 2, attachment anxiety and avoidance were entered, followed by overall trait mindfulness in Step 3. Attachment variables were entered prior to mindfulness due to general consensus within the research that attachment style is relatively stable and enduring across the lifespan (Bowlby, 1969).

In order to assess for interactions among continuous variables, attachment anxiety, attachment avoidance, and overall trait mindfulness were entered and then interaction term(s) were computed (Aiken & West, 1991). The two product variables of interest were entered in Step 4 to test for the moderating effect of mindfulness on the relationship between attachment and TEI levels. As predictor variables were entered into the equation, adjusted R^2 values sequentially increased, which accounted for the amount of variance explained above and beyond the block of predictor variables entered in the previous step (Huck, 2008).

CHAPTER IV

RESULTS

Instrumentation and Preliminary Analyses

Data analysis began with gathering relevant information about correlations between variables of interest and other descriptive statistics. All analyses were conducted with SPSS (version 21, Macintosh OS X 10.8.4). See Table 2 for descriptive statistics (alpha levels, means, and standard deviations) and Pearson correlations.

Cronbach's α was utilized to measure internal consistency, which was excellent in the present study (Kline, 2011) for the two ECR-R subscales scores, anxiety (α = .94) and avoidance (α = .95), FFMQ overall trait mindfulness (α = .92), TEIQue-SF global TEI (α = .90), and two of the five FFMQ facets: Describing (α = .90) and Nonjudging of Inner Experience (α = .91). The three remaining FFMQ subscales demonstrated good internal consistency, with Cronbach's α ranging from .82 (Observing and Nonreactivity to Inner Experience) to .87 (Acting with Awareness) for scores in this sample.

Correlations among measures were calculated (Table 2). Results indicated a strong relationship between attachment-related anxiety (r = - .57, p < .0001) and global TEI and between attachment-related avoidance (r = - .44, p < .0001) and global TEI. Multicollinearity was not violated, according to relatively low variance inflation factor (VIF) values of continuous variables (O'Brien, 2007). According to O'Brien (2007), VIF values ranging from 4 to 10 may be indicative of multicollinearity, meaning a correlation

coefficient of .90 or higher exists among variables (Kline, 2011). This suggests that higher levels of attachment anxiety and avoidance were associated with lower levels of global TEI in this sample. Significant positive relationships were found between all five FFMQ subscales and global TEI (see Table 2), suggesting that higher levels of mindfulness facets were associated with higher levels of global TEI. Results indicated a strong positive relationship between overall trait mindfulness and global TEI ($r = .76$, $p < .0001$), suggesting an association between higher levels of overall mindfulness and higher levels of global TEI.

Preliminary analyses were performed to ensure that regression assumptions of normality of residuals, homoscedasticity, and normality were not violated. The assumption of minimal multicollinearity was met by examining the correlation matrix, wherein correlations between scales did not reach or exceed .90 (Kline, 2011). The regression assumption of minimal multicollinearity was also assessed and met by examining VIFs. Collinearity statistics indicated that VIF values for continuous variables of interest ranged from 1.02 – 1.63, which is markedly less than the generally accepted thresholds of 4 or 10 discussed in the literature (O'Brien, 2007). Scatterplots, histograms, normal probability plots, and a Kolmogorov-Smirnov (K-S) test were produced to assess for normality of residuals (Table 3). Standardized residuals ranged from - 3.66 to 3.74 ($SD = .99$). Normal P-P plots displayed reasonably straight lines, suggesting a normal distribution of scores. The value for Cook's Distance (.065) was checked to explore the potential impact of outliers on the regression model (Pallant, 2010). The maximum value for Cook's Distance was less than 1, indicating no serious problems from the standardized residual values falling outside of the -3.0–3.0 range

(Tabachnick & Fidell, 2007). Skewness and kurtosis statistics indicated non-significant values ($p > .05$) for the FFMQ Acting with Awareness subscale, FFMQ overall mindfulness, and global TEI. These values indicate normality of distribution. Conversely, K-S values for the remaining variables were significant ($p < .001$), suggesting violation of the assumption of normality, which can be common in large samples (Pallant, 2010). Other normality indicators suggested that the data were normally distributed. The Durbin-Watson *d* statistic was used to assess for serial correlation among residuals. Values range from 0 to 4, with values close to 0, suggesting a strong positive correlation, and values close to 4, suggesting a strong negative correlation. In the current study, the Durbin-Watson *d* statistic was 1.87, which is indicative of no serial correlation (Durbin & Watson, 1951).

Table 3

Tests of Normality

Subscale	K-S[1]	Skewness	Kurtosis
1	.063**	.175	-.821
2	.081**	.411	-.565
3	.064**	-.268	-.358
4	.071**	-.255	-.584
5	.039	-.077	-.094
6	.044*	-.119	-.569
7	.049*	-.121	.139
8	.035	-.015	.165
9	.032	-.342	.243

Note. $N = 510$. 1 = ECR-R Attachment Anxiety subscale; 2 = ECR-R Attachment Avoidance subscale; 3 = FFMQ Observing subscale; 4 = FFMQ Describing subscale; 5 = FFMQ Acting with Awareness subscale; 6 = FFMQ Nonjudging of Inner Experience subscale; 7 = FFMQ Nonreactivity to Inner Experience subscale; 8 = FFMQ overall Mindfulness; 9 = TEIQue-SF Global TEI.
[1]Kolmogorov-Smirnov test.
*$p < .05$.
**$p < .001$.

Experiences in Close Relationships Scale-Revised

Attachment-related anxiety and avoidance statistics indicated some similarities with ECR-R norms (Fraley, 2012) obtained from a sample of over 17,000 online survey respondents (Table 4). Fraley (2012) suggested using anxiety and avoidance median scores to assign participants to groups (Table 5) for the purposes of interpreting attachment levels within the conceptual framework of attachment style (Bartholomew & Horowitz, 1991). In this study, the median scores for anxiety (MANX) and avoidance (MAVOID) were 3.33 and 2.72, respectively. See Appendix H for guidelines (Fraley, 2012) that can be used to convert levels of attachment-related anxiety and avoidance into categories or styles.

Table 4

ECR-R Summary Statistics

Statistic	Current Study	Norms
Anxiety	$M = 3.30$, $SD = 1.33$	$M = 3.56$, $SD = 1.12$
Avoidance	$M = 2.86$, $SD = 1.19$	$M = 2.92$, $SD = 1.19$

Note. Norms based on 17,000 online survey respondents (Fraley, 2012).

Table 5

Global TEI Percentiles and Scores

Percentile	Current Study Score	Norms Score
10	4.20	4.13
20	4.47	4.50
30	4.78	4.77
40	4.97	5.03
50	5.15	5.20
60	5.33	5.37
70	5.57	5.53
80	5.77	5.73
90	6.13	5.97

Five Facet Mindfulness Questionnaire

A reported, 71.8% (n = 366) of this study's participants (N = 510) categorized themselves as non-meditators on the demographic questionnaire. This percentage is consistent with the undergraduate student sample upon which the FFMQ was created (Baer et al., 2006), wherein 72% (N = 613) described themselves as having no meditation experience.

Trait Emotional Intelligence Questionnaire--Short Form

Results indicated a mean score of 5.14 (SD = .78) on the TEIQue-SF for this sample, with a 95% confidence interval suggesting that 95% of respondents' true scores

fell between 5.01 and 5.20. Petrides (2009) recommended interpreting TEIQue-SF scores within the context of percentiles for any given sample. Percentiles were examined for this study's sample and then compared and contrasted with global TEI norms for the TEIQue-SF (Table 6). Comparison of the current study's and the standardization sample's (Petrides & Furnham, 2006) descriptive statistics for the TEIQue-SF indicated similarities. The TEI scores were categorized into three groups using visual binning to explore the distribution of TEI scores within this sample (Table 6). Cooper and Petrides (2010) reported internal consistency for global TEI scores as .89 for males and .88 for females.

Table 6

TEI Categories (N = 510)

Mean Score	Frequency	Percent
< 4.83	164	32.2
4.83–5.49	179	35.1
5.50+	167	32.7

Independent Samples T-test

An independent samples t-test was performed to explore any potential differences in levels of TEI between the meditator and non-meditator groups. There was a significant difference in TEI scores for meditators ($M = 5.28$, $SD = .75$; $t\ (508) = 2.71$) and non-meditators ($M = 5.08$, $SD = .78$); $t\ (272) = 2.76$, $p = .01$, two-tailed). The effect size of the differences in the mean scores (mean difference = .21, 95% *CI*: .06 to .35) was

small (d = .26) based on Cohen's (1988) guidelines. Given the small effect size difference between the meditator and non-meditator groups, data were collapsed, and the total sample of 510 participants was used for additional analysis.

Hierarchical Multiple Regression

Hierarchical multiple regression analysis was conducted to assess the extent to which interactions between attachment anxiety and avoidance with dispositional mindfulness explained the variance in global TEI levels. Step 1 included entry of all demographic variables of interest, followed by attachment-related anxiety and attachment-related avoidance. Step 3 involved the entry of overall mindfulness, while Step 4 included two product variables (i.e., anxiety*mindfulness, avoidance*mindfulness) to test for the moderating effect of mindfulness. Evaluation of the model summary (Table 7) indicated that the model, as a whole, explained 65% of the variance in the dependent variable, global TEI. Examination of the ANOVA table (Table 8) indicated that the model as a whole (i.e., including all blocks of variables) was significant (F (10, 499) = 94.46, p = <.001).

Table 7

Model Summary

Step	R	R^2	Adj. R^2	SE	R^2 Change	F Change	Sig. F Change	D-W
1	.25	.06	.05	.76	.06	6.49	<.001	
2	.62	.38	.37	.62	.32	128.11	<.001	
3	.81	.65	.64	.46	.27	386.45	<.001	
4	.81	.65	.65	.46	.01	3.98	.019	1.87

Note. Dependent variable was Global TEI. Step 1 = Age, Race, Gender, College Classification, Meditation; Step 2 = Attachment Avoidance, Attachment Anxiety; Step 3 = Mindfulness; Step 4 = Attachment Anxiety*Mindfulness, Attachment Avoidance*Mindfulness.

Table 8

ANOVA Table

Step		Sum of Squares	df	Mean Square	*F*	*p*
1	Regression	18.53	5	3.71	6.49	<.001
	Residual	287.96	504	.57		
	Total	306.49	509			
2	Regression	115.84	7	16.55	43.57	<.001
	Residual	190.65	502	.38		
	Total	306.49	509			
3	Regression	198.86	8	24.86	115.71	<.001
	Residual	107.63	501	.22		
	Total	306.49	509			
4	Regression	200.55	10	20.06	94.46	<.001
	Residual	105.94	499	.21		
	Total	306.49	509			

Note. Dependent variable was Global TEI. Step 1 = Age, Race, Gender, College Classification, Meditation; Step 2 = Attachment Avoidance, Attachment Anxiety; Step 3 = Mindfulness; Step 4 = Attachment Anxiety*Mindfulness, Attachment Avoidance*Mindfulness.

Results indicated that college classification, attachment-related anxiety, overall trait mindfulness, and the moderator variable of anxious attachment with mindfulness (anxiety*mindfulness) each made unique and significant contributions to the overall explained variance in levels of global TEI (Table 7). In Step 1, entry of the demographic variables explained approximately 6% of the variance. College classification contributed unique variance to the overall model (β = -.11, p = .001). The entry of attachment-related anxiety and avoidance in Step 2 significantly explained an additional 32% of the variance in TEI levels after controlling for demographic variables. Mindfulness was entered in Step 3, which also significantly explained an additional 27% of the variance in the outcome variable. The moderating effect of mindfulness with attachment levels on global TEI involved entering two interaction terms in Step 4, which explained

approximately 1% of additional variance in global TEI after controlling for all other variables of interest.

The significance of variables was interpreted by examining the magnitude of its coefficient, as opposed to interpreting *F* change(s), since variables were standardized prior to data analysis (see Table 7 for R^2 change and *F* values). Attachment-related anxiety made the greatest unique significant contribution to the overall regression equation, as represented by the largest beta value (β = -.69, p = <.001). Trait mindfulness was also unique in its contribution (β = .46, p = <.001). In addition, the moderator variable of attachment-related anxiety with overall mindfulness made a significant unique contribution to the equation (β = .46, p = <.001).

The significant moderating effect of mindfulness with attachment anxiety on global TEI levels was expressed by a change in the standardized beta value from negative to positive. In alignment with previous research findings (Goodall et al., 2012; Saavedra et al., 2010), higher levels of attachment anxiety explained lower levels of TEI, while higher levels of mindfulness explained higher levels of TEI. The significant moderating role of mindfulness was demonstrated in Step 4 of the regression equation (β = .42, p = .01), suggesting that higher levels of overall mindfulness may explain concurrently higher levels of TEI in anxiously attached individuals. More specifically, the inclusion of the moderating variable (anxiety*mindfulness) in Step 4 suggested that mindfulness may serve a protective or buffering role for anxiously attached adults by increasing their likelihood of having higher levels of TEI. Neither attachment-related avoidance nor the interaction of attachment avoidance with mindfulness emerged as significant in explaining global TEI. Lastly, college classification added unique variance to the overall

model (β = -.11, p = .001), which indicated an inverse relationship. In other words, higher levels of college classification were associated with lower levels of TEI.

Table 9

Hierarchical Regression Analysis

Step	Explanatory Variable	*B*	SE *B*	β	*t*	*p*	Adj. R^2	*F* change
1							.05	6.49
	Gender	.02	.05	.01	.41	.69		
	Age	.02	.01	.04	1.3	.18		
	Race	-.02	.01	-.04	-1.4	.16		
	College	-.05	.02	-.11*	-3.34	.001		
	Meditation	.03	.05	.02	.60	.55		
2							.37	128.11
	Anxiety	-.41	.11	-.69*	-3.75	<.001		
	Avoidance	-.04	.12	-.06	-.34	.74		
3							.64	386.45
	Mindfulness	.68	.11	.46*	5.98	<.001		
4							.65	3.98
	Anxiety x Mindfulness	.08	.03	.42*	2.52	.01		
	Avoidance x Mindfulness	-.01	.04	-.05	-.29	.77		

*p < .05.

Research Questions

Research Question 1

Research Question 1 pertained to the extent to which levels of trait mindfulness moderated the relationship between levels of attachment-related avoidance and levels of TEI. The exploratory nature of this study hypothesized that levels of TEI would significantly change, depending on the level and presence of trait mindfulness. The addition of the moderator variable (avoidance*mindfulness) did not add a significant unique contribution to the overall model (β = -.05, p = .77), suggesting that mindfulness may not serve a significant explanatory role in levels of TEI among avoidantly attached individuals.

Research Question 2

The second research question was interested in exploring the potential moderating effect of trait mindfulness on TEI, dependent upon one's level of attachment-related anxiety. It was hypothesized that dispositional mindfulness would significantly interact with attachment anxiety in such a way as to alter the direction of the relationship with self-reported TEI. The interaction of attachment anxiety and mindfulness into the regression model at Step 4 added significant and unique variance in explaining participants' levels of TEI ($\beta = .42$, $p = .01$). Findings resulted in rejecting the null hypothesis that mindfulness would not moderate the relationship between attachment anxiety and global TEI.

Summary

The primary objective of this study was to ascertain the degree to which dispositional mindfulness interacted with anxious and avoidant attachment levels in such a way as to impact the strength or direction of global TEI. Results confirmed previous research findings on the significant relationships between attachment levels, mindfulness, and TEI. The current study endeavored to build upon prior research by exploring the potential moderating role of dispositional mindfulness. Findings suggested a significant moderator effect of attachment anxiety with mindfulness on global TEI. These results indicate that dispositional mindfulness may explain a proportion of the variance in TEI among anxiously attached individuals. In particular, dispositional mindfulness may serve as a protective or buffering role among anxiously attached individuals. Findings from this study may inform practice implications for counseling psychologists working

with anxiously attached individuals. Specifically, the addition of mindfulness skills training to treatment as usual for this population may increase levels of emotional intelligence, thus protecting anxiously attached adults from some of the interpersonal difficulties associated with high levels of attachment-related anxiety.

CHAPTER V

DISCUSSION

Overview

This study sought to build upon the extant research findings that have elucidated significant relationships between the constructs of attachment, trait emotional intelligence (TEI), and mindfulness. The literature (Cherry, Fletcher, & O'Sullivan, 2013; Hamarta et al., 2009; Mc Elroy & Hevey, 2014) has consistently demonstrated that individuals with higher levels of attachment-related anxiety and avoidance tend to have concomitantly lower levels of emotional intelligence than adults with lower levels of attachment-related anxiety and avoidance (i.e., secure attachment). Attachment levels are considered relatively stable throughout the lifespan (Fraley, 2002; Fraley & Brumbaugh, 2004; Smith et al., 2008), suggesting that insecurely attached adults may continually struggle with a variety of interpersonal difficulties commonly found among individuals with low levels of emotional intelligence (Petrides, 2009).

Given the considerable intra- and interpersonal advantages of both secure attachment and higher levels of TEI, it is worthwhile to consider what constructs may serve a protective (i.e., buffering) role for individuals with insecure attachment orientations. In other words, what qualities might adults with higher levels of attachment-related anxiety or avoidance inherently have, or be capable of developing through practice, to help increase levels of TEI? Within the context of the trait EI model,

levels of global TEI are expressed through variation in four self-reported trait-based factors: well-being, self-control, emotionality, and sociability (Petrides, 2009). It is possible that high levels of dispositional mindfulness among more insecurely attached adults may explain concurrently higher levels of TEI.

The current study set out to understand the potential moderating effect of mindfulness on the relationship between attachment levels and TEI. As supported by prior research (Furnham & Petrides, 2003), the results indicated a significant positive relationship between global TEI and mindfulness. This suggests that individuals with higher levels of TEI tended to have concurrent higher levels of mindfulness. In alignment with the literature, participants who reported higher levels of attachment-related anxiety or avoidance also tended to report lower levels of both emotional intelligence (Hamarta et al., 2009) and mindfulness (Saron & Shaver, 2006).

As a whole, the hierarchical regression model (see Table 7) used in this study explained the majority (i.e., 65%) of the variance in levels of global TEI. Two exploratory hypotheses were tested:

H1 The relationship between levels of attachment related avoidance and levels of TEI will significantly change depending on the presence and level of trait mindfulness.

H2 The relationship between levels of attachment related anxiety and levels of TEI will significantly change depending on the presence and level of trait mindfulness.

In other words, mindfulness served as a moderating variable, meaning that it has the potential to change the relationship between other variables (e.g., attachment-related anxiety and avoidance with global TEI). Results supported the second hypothesis, indicating that variance in TEI levels among more anxiously attached adults differed

depending on participants' mindfulness levels. In sum, higher levels of mindfulness among more anxiously attached adults in this sample appeared to buffer the relationship between attachment-related anxiety levels and TEI levels. Results did not support the first hypothesis, indicating that mindfulness did not interact with the relationship between attachment-related avoidance levels and global TEI in a meaningful way for participants in this study.

Theoretical Implications

These research findings have been viewed, interpreted, and extrapolated upon through the lens of attachment theory. Within this theoretical framework, individuals are thought to construct internal working models, or mental representations, of themselves and others based on repetitive interpersonal interactions with their primary caregiver that are perceived as either rewarding or frustrating (Ainsworth et al., 1978; Bowlby, 1969). These working models are considered cognitive processes that exert an influence on the manner in which individuals tend to perceive, attend to, and process emotionally significant information (Fraley, Niedenthal, Marks, Brumbaugh, & Vicary, 2006). The attachment behavioral system serves a crucial role in the individual's ability to answer the unspoken question of whether or not an attachment figure is accessible, nearby, and attentive. A theoretical assumption of attachment theory is that differences in perceptual vigilance of emotionally and socially evocative stimuli accounts for greater activation of the attachment behavioral system among anxiously attached individuals (Fraley & Shaver, 2000). Mikulincer and Shaver (2007) refer to this heightened state of arousal as hypervigilance, which is thought to account for differences in the degree to which people

are concerned about whether significant others love them, and subsequently, whether or not they are truly lovable as a person.

Findings in the present study add to the theoretical knowledge base of attachment theory by building upon prior studies that have tested theoretical assumptions of attachment theory and individual differences among anxiously attached adults. Specifically, research conducted by Fraley et al. (2006) found that adults with higher levels of attachment-related anxiety tend to be more hypervigilant to emotional cues and interpret the emotional content of others' facial expressions more quickly than other adults. Anxiously attached individuals showed more impaired judgment in accurately judging emotional cues than less anxiously attached adults, although they were significantly more accurate in their emotional conclusions when given more time and information to process the external stimuli (i.e., the emotional content of facial expressions). Fraley et al.'s (2006) findings are important to the ongoing development of attachment theory, since the paradoxical results seem to imply that more anxiously attached adults demonstrate greater accuracy than others in their assessments of interpersonal emotional cues when allowed more time and information before making final judgments. In other words, more anxiously attached adults' typical tendency toward hypervigilance may be interpersonally adaptive if they learn effective methods of emotional regulation.

This study's results have the potential to build upon the basic theoretical assumptions about the interpersonal difficulties more anxiously attached individuals tend to face and the way they tend to assess and process emotionally laden content. For instance, Fraley et al. (2006) suggested that anxious adults' hypervigilance might be

socially advantageous if regulated and harnessed more effectively. Mindfulness skills training can provide tools for regulating emotions, tolerating distress, and managing interpersonal exchanges with greater ease and less anxiety (Bishop et al., 2004; Linehan, 1993b). The present study found a significant moderating effect of mindfulness on the relationship between attachment-related anxiety and emotional intelligence. These findings may provide insight into the benefits associated with high levels of mindfulness for more anxiously attached adults. Specifically, these results challenge the assumption that more anxiously attached adults are fated to experience intra- and interpersonal difficulties across the lifespan (Chopik, Edelstein, & Fraley, 2013; Collins & Feeney, 2000).

Attachment theory is also considered an emotion-regulation model (Fraley et al., 2011), rendering it useful in conceptualizing individual differences in facets of emotional intelligence. For instance, the interplay between attachment-related anxiety or avoidance levels with global TEI can be interpreted in a unique manner through the lens of attachment theory as an emotion-regulation model. Prior research (Campos, Mumme, Kermoian, & Campos, 1994) has demonstrated the value of conceptualizing emotion within a relational framework, and attachment theory offers an appropriate theoretical compass to deepen understanding of emotional recognition, appraisal, and regulation. The present study's findings provided further support for the dynamic nature between levels of attachment-related anxiety and global TEI; interpersonal patterns and expectations commonly developed in early formative relationships among more anxiously attached individuals may be linked with their emotional interpretations and reactions as adults. In particular, these findings contribute to the extant literature by

offering insight into the influential role of attachment-related anxiety levels within the context of mindfulness and TEI.

Trait EI theory is based upon the inherently subjective nature of intrapsychic emotional phenomena (Petrides, 2010). One way in which this theoretical framework diverges from the conceptualization of ability EI is the difficulty of accurately measuring emotional abilities in an objective manner. In other words, it is unclear how to assess "competence judgments concerning . . . emotional 'abilities' when [only the] individual . . . has direct access to the information necessary for making such a judgment" (Petrides, 2010, p. 137). Similarly, the mindfulness-based third-wave behavior therapy, Acceptance and Commitment Therapy (ACT; Hayes & Wilson, 1994), categorizes competence judgments (e.g., trait EI) as private experiences that can only be fully known by the individual him/herself.

According to ACT, it describes private experiences as intrapsychic phenomena, which include thoughts, emotions, and physical sensations (Harris, 2006). As opposed to most Western psychotherapies, treatment goals in ACT diverge completely from symptom reduction due to the presupposition that using this terminology pathologizes natural aspects of human life. Thus, ACT conceptualizes private experiences (e.g., unpleasant thoughts or emotions) as naturally occurring processes inherent to the human experience (Hayes, Pistorello, & Levin, 2012). Theoretically grounded in Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001), ACT seeks to alter the meaning and impact of problematic cognitive processes by loosening attachments to rigid self-narratives (e.g., "I am someone who always does well in school").

Overidentification with any given self-concept is thought to inhibit psychological flexibility and lead the individual to reject information perceived as inconsistent with his or her conceptualized self (Batten, Orsillo, & Walser, 2005). Within the ACT framework, the attempt to rid oneself of so-called symptoms (i.e., private experiences) is a futile battle that creates unnecessary suffering, fueled by experiential avoidance (e.g., Cowdry & Park, 2012). Rather than avoid or minimize unwanted thoughts or feelings, ACT draws from mindfulness and experiential exercises designed to transform clients' relationships with unwanted private experiences by increasing acceptance and psychological flexibility (Hayes & Wilson, 1994). In this way, ACT lends additional support to the utility of both attachment theory and trait EI theory in understanding the complex interplay between private experiences (e.g., TEI) with more deeply ingrained interpersonal patterns and expectations (e.g., attachment-related anxiety and/or avoidance).

Attachment theory and TEI theory are complementary in that each framework provides a personality-based approach toward understanding intra- and interpersonal phenomena and constructs (e.g., mindfulness). Individuals with lower levels of attachment anxiety and avoidance are considered more securely attached, whereas optimal levels of TEI vary depending upon one's environment, such as vocation (Petrides, 2010). The integration of attachment theory with TEI theory offers a multifaceted approach toward understanding the pivotal intersection of early developmental experiences with the construction of emotional intelligence as an adult. Additionally, mindfulness-based therapies such as ACT and Dialectical Behavior Therapy (DBT; Linehan, 1993a) bolster the combined impact of attachment theory and

TEI theory in conceptualizing group differences in emotional intelligence and interpersonal effectiveness among more anxiously attached adults.

These theoretical implications offer a coherent framework through which to interpret and expand upon the current study's findings. For instance, through the lens of attachment theory, an adult with higher levels of attachment-related anxiety would be expected to display more marked interpersonal difficulties and hindrances in the accurate appraisal of their own and others' emotions. Results supported previous research (Kim, 2005; Lanciano, Curci, Kafetsios, Elia, & Zammuner, 2012; Pepping et al., 2013) that has indicated the presence of an inverse relationship between attachment anxiety and TEI levels. Interestingly, the inclusion of mindfulness significantly impacted this relationship such that more anxiously attached adults with coexisting higher levels of mindfulness were more likely to have higher levels of TEI than more anxiously attached adults without higher levels of mindfulness. This finding is important to furthering advances in the assumptions underlying both attachment theory and TEI theory, as it contrasts with what each theory would anticipate from an anxiously attached adult. Not only is the impact of mindfulness among more anxiously attached adults noteworthy within the attachment and TEI theoretical frameworks, these findings also point toward the clinical importance of uncovering the potential mechanisms by which mindfulness may be a protective factor or buffer among this group.

Practice Implications

Counseling psychologists would benefit from incorporating relevant findings from this study and the extant literature into practice. Practice implications from this study are of particular relevance to counseling psychologists, whose role, according to the

American Psychological Association (APA, 2008), involves helping "people with physical, emotional, and mental disorders improve well-being, alleviate distress and maladjustment, and resolve crises. In addition, [counseling psychologists] provide assessment, diagnosis, and treatment of psychopathology" (Lichtenberg, Resnick, & Minami, 2012, p. 8). The Society of Counseling Psychology (n.d.) distinguishes the primary functions of counseling psychologists as attending to the "emotional, social, vocational, educational, health-related, developmental and organizational concerns" within a multicultural context at the individual and community levels. This group of mental health professionals can apply this study's results to clinical practice through routine assessment of clients' attachment patterns, overall mindfulness, and global TEI through brief self-report measures (FFMQ, Baer et al., 2006; ECR-R, Fraley et al., 2000; TEIQue-SF, Petrides & Furnham, 2006) prior to beginning treatment. The initial data collected in this way would provide the clinician with baseline levels of each client's attachment-related anxiety and avoidance, mindfulness, and emotional intelligence levels.

The major results from the current study suggest that emotional intelligence levels vary among more anxiously attached adults depending upon their levels of mindfulness. These findings may inform the treatment-planning process for more anxiously attached clients with concurrently low levels of TEI. Counseling psychologists may provide more effective treatment for this subset of clients by integrating mindfulness-based interventions into the therapeutic process with the explicit purpose of increasing aspects of TEI (e.g., well-being, self-control, emotionality, and sociability). Results suggest that these individuals could reverse the negative impact of higher levels of attachment anxiety on emotional intelligence by cultivating mindfulness through practice (Bishop et al.,

2004). Given these findings, the integration of mindfulness-based interventions into treatment with more anxiously attached adults may serve as a useful means of achieving clinically significant change.

Clinicians could assess treatment effectiveness through readministration of the afore-mentioned self-report measures; effective outcomes could then be assessed based on significant changes in clients' levels of emotional intelligence. In essence, counseling psychologists would anticipate that if a more anxiously attached adult's mindfulness level increases over the course of treatment, then his or her level of TEI should increase as well.

Higher levels of attachment-related anxiety have been associated with tendencies to ruminate and overly intensify unpleasant emotions (Mikulincer & Shaver, 2007), while attachment-related avoidance levels have been connected to suppression and denial of emotional states (Mikulincer et al., 2003). This study's results indicated an inverse relationship between attachment anxiety and TEI levels, suggesting that more anxiously attached participants may be more likely to report lower levels of TEI than other participants. While this relationship is not necessarily causal, and thus should be interpreted with caution, it may highlight the need for unique therapeutic interventions designed to cultivate emotional intelligence among these adults. In particular, mindfulness-based practices/interventions may serve as a route toward increased facets of emotional intelligence for more anxiously attached college students.

Mindfulness and rumination are both considered different ways of focusing one's attention, with each type of focus impacting the subjective experience of negative affect and capacity for emotion regulation in distinctive ways (Huffziger, Ebner-Priemer,

Eisenbach, Koudela, Reinhard, Zamoscik, Kirsch, & Kuehner, 2013). Mindfulness has been described as an adaptive method of attention focusing (Kabat-Zinn, 2003) that entails adopting a nonjudgmental, neutral stance toward intrapsychic phenomena (e.g., thoughts and emotions). Dysfunctional rumination is defined as "an excessive and maladaptive focus on negative feelings, their causes and consequences" (Lanciano et al., 2012, p. 753). This way of responding to internal distress is dysfunctional insofar as the individual engages in passive, repeated attentional focus on unpleasant symptoms and their possible impetuses and outcomes (Lyubomirsky & Nolen-Hoeksema, 1995).

Rumination tends to occur more frequently among more anxiously attached adults (Mikulincer et al., 2003) and has been implicated as a risk factor for depression (Kuehner, Huffziger, & Liebsch, 2009). Individuals with higher levels of attachment-related anxiety typically utilize hyper-activating strategies to mitigate expected or current distress, which results in cognitive hypervigilance toward unpleasant affect (Lanciano et al., 2012). Mindfulness meditation is considered to bring about a shift in perspective that enables an individual to attend to information in the present moment without reactivity or impulsivity (Shapiro, Carlson, Astin, & Freedman, 2006). For more anxiously attached adults, mindfulness meditation may serve as a useful tool by which to develop more flexible patterns of responding to cognitive, emotional, and behavioral stimuli (Sedlmeier et al., 2012). Although rumination was not explicitly assessed in the current study, there is substantial evidence for a significant relationship between attachment anxiety and dysfunctional rumination. Research has suggested that induced mindfulness (e.g., mindfulness training or practice) leads to positive mood and willingness to tolerate distress (Sauer & Baer, 2011). Positive mood is related to the TEI facets of trait

optimism and trait happiness, while distress tolerance shares similarities to the facets of emotion regulation, stress management, and impulsiveness. Generalized toward this sample, dysfunctional rumination may emerge as a noteworthy target for mindfulness-based treatment interventions with more anxiously attached adults.

College classification added unique variance to the overall model, suggesting that participants' student status (e.g., freshman or senior) significantly impacted their levels of TEI after controlling for other demographic variables. These findings align with prior research (Mikolajczak et al., 2007) that has implicated TEI as predictive of the emotion-based capacities necessary "to cope with the stress and demands of educational environments" (Sanchez-Ruiz, Mavroveli, & Poullis, 2013, p. 658). In essence, the regression model may have explained unique variance in emotional intelligence levels among participants who are more advanced in their academic careers. However, future research could explore if participants' career development may also be related to emotional intelligence. It follows that individuals may derive differential elevations in global TEI from mindfulness-based practices. According to the present study and prior research (Baer et al., 2006), approximately 70% of college students report engaging in a regular mindfulness-based practice, such as meditation. Meditation practices from eastern religious and spiritual traditions have been adapted for secular use and integrated into current therapeutic interventions (e.g., ACT, DBT, and MBSR). Within the context of counseling, mindfulness interventions are conceptualized as "skills" or "tools" that can be learned, practiced, and applied to everyday life to reduce distress and increase overall well-being (Baer et al., 2006). Prior studies (Shapiro, Oman, Thoresen, Plante, &

Flinders, 2008) have found a variety of benefits that result from mindfulness training interventions among college and graduate students.

In particular, Koru Mindfulness (Rogers & Maytan, 2012), a workshop at Duke University, has demonstrated success in teaching mindfulness and meditation skills to undergraduate and graduate students between the ages of 18 and 29. One unique aspect of the Koru program is that it specifically accounts for developmental processes common to this age group, termed emerging adults (EAs) (Arnett, 2000). Specific characteristics of EAs include instability and change, identity exploration, and feeling somewhere in between adolescence and adulthood (Arnett, 2004). Mindfulness is considered to support the maturation process of EAs, resulting in a greater awareness of their core values and ability to make decisions in alignment with their authentic self (Rogers, 2013).

Given that the target population of the current study was college students, the success of the Koru program is of particular interest. Although the Koru program does not include assessment of attachment, students who completed the structured program in its entirety reported significant positive changes in self-compassion, positive affect, mindfulness, and motivation. Participants also endorsed significantly lower levels of perceived stress, anxiety, and sleep-related difficulties. These positive outcomes have been supported by a recent randomized controlled trial of Koru. Koru demonstrated successful outcomes with four 75-minute classes, weekly meditation homework, and a group format of approximately 12 students. The critical teaching elements of Koru are nested within three categories: organizational, teaching, and student factors. Organizational factors include diversity of participants, a group size of 8 to 12, four 75-minute classes, and structured course requirements. Teaching factors found to be most

effective involve a very active teaching style, use of stories and metaphors, and providing some quick relief of anxiety and stress. Rogers (2013) emphasized the importance of clarifying the term "acceptance" (i.e., as an active process) and offering research-based data on the benefits of mindfulness to college students. Practice implications for counseling psychologists, particularly those working within a university counseling center setting, may integrate basic principles of the Koru program (e.g., sensitivity to developmental processes common among young adults and structured group sessions) to facilitate components of mindfulness, which in turn may increase their emotional intelligence based on the present study's findings. These workshops or outreach programs similar to the Koru program that are delivered by counseling psychologist may also help college students in their career development process as well as their academic process.

A recent study by Abe et al. (2013) found preliminary evidence that TEI can be developed among undergraduate medical students ($N = 181$) through participation in a half-day mental health workshop designed to cultivate emotional awareness. The effectiveness of this workshop in building emotional awareness relates to this study, as emotional awareness is considered to be a component of both mindfulness and emotional intelligence (Kabat-Zinn, 2003; Nielsen & Kasniak, 2006). The workshop intervention began with brief lectures from physician facilitators who disclosed painful experiences related to their professional careers (e.g., the sudden death of a medical student). After this self-disclosure process was modeled for the undergraduate students, they formed small groups of six and were instructed to share a distressing, although not overly personal, event from their own lives with the group. Participants formed dyads wherein

they practiced listening to their partners' feelings and expressing their own. Trait emotional intelligence was assessed with the TEIQue-SF at three intervals: pre- and post-intervention and at a one-year follow-up. Results indicated that TEI significantly increased at post-intervention and that improvements were maintained at the one-year follow-up. Eighty percent of participants reported they would recommend the workshop to others. Participants also indicated noticeable improvements in their perceived abilities to listen to and express emotions. Researchers concluded that talking openly with others about distressing experiences improves TEI (Abe et al., 2013). This relates to the present study in that increased levels of mindfulness are associated with the ability to describe and discuss unpleasant thoughts and emotions with greater ease (Baer et al., 2006; Linehan, 1993a). Based on the results of this study, more anxiously attached individuals may become more comfortable discussing internal distress with others through developing mindfulness.

Counseling psychologists working within a university counseling center setting may integrate research findings from Abe et al.'s (2013) workshop with college students in a group counseling or campus outreach (i.e., didactic and experiential workshop) format/program. It is possible that students may respond differently to emotional intelligence or mindfulness building interventions within a group counseling or workshop format, based on levels of anxious and/or avoidant attachment. Clinicians can integrate this study's findings by tailoring treatment to the specific needs of anxiously attached individuals by including mindfulness skill building exercises into the workshop (e.g., Linehan, 1993b). Practice implications from the present investigation suggest that anxiously attached adults may derive unique benefits (e.g., increased TEI) from increased

mindfulness, suggesting that adding mindfulness interventions to an effective TEI-building workshop (Abe et al., 2013) could offer substantial gains for this population. Additionally, incorporating aspects of Abe et al.'s (2013) emotional intelligence workshop with the Koru mindfulness program (Rogers & Maytan, 2012) may provide more anxiously attached students with even greater benefits. One possibility of infusing components of both programs would be adding an experiential TEI-building exercise (e.g., listening and reflecting emotions in dyads) to the preexisting structure of the Koru program. This may be a useful way of integrating mindfulness with emotional intelligence-building workshops that are provided by counseling psychologists.

Limitations

While these results indicated support for significant relationships between variables of interest (i.e., mindfulness, TEI, and attachment) and a unique moderating effect of mindfulness for anxiously attached adults, several limitations should be considered upon interpretation of the data. This study employed a cross-sectional non-experimental design using online survey methods. While this design has benefits, such as easy access to a wide range of participants, reduced time and cost, there are inherent limitations involved with self-reported information and online survey methods (Groves, et al., 2011). Possible disadvantages of self-reports include social desirability bias and errors in self-observation (Hancock & Flowers, 2001). In other words, participants may respond to items in a way that they believe to be more favorable, just as they may respond to items inaccurately due to difficulties with self-awareness.

Another limitation of the present study is that it was not an experimental study that involved a control group, meaning that inferences regarding cause and effect cannot

be made. The current investigation utilized online self-report measures of attachment, mindfulness, and TEI and is considered exploratory in nature (i.e., without references to causality). One of the limitations of cross-sectional designs is that since data are collected from participants at one specific point in time, it is not possible to employ repeated measurements and assess change over time. Generalizability (i.e., the degree to which this study's sample was representative of the target population) was a threat to external validity for this cross-sectional study design. The target population specified was college students, with data collected through online survey methods from three diverse (e.g., differing in size, location, demographic variables, and admissions criteria) universities in the New England, Southwest, and Rocky Mountain regions. This study's sample consisted of 67.8% undergraduate students (i.e., freshman, sophomore, junior, or senior), 26.1% graduate students, and 6.1% "other."

The specific assessment measures employed in this investigation may have their own limitations, such as offering less comprehensive factor- or facet-based results that could be obtained through use of the lengthier versions or non-self-report assessments. In particular, use of the TEIQue as opposed to the TEIQue-SF may have expanded interpretable data from a unitary construct (i.e., global TEI) to 15 facets, four factors, as well as global TEI. Given the lengthy nature of the TEIQue (i.e., 153 items) and the objective to obtain online self-report data from participants in a relatively short amount of time (approximately 25-30 minutes), the TEIQue-SF was used and because the present study examined only the global construct of emotional intelligence. While the FFMQ has not been transformed into a shortened version, data from the FFMQ may be interpreted as five distinct facets (i.e., providing more detailed information about specific aspects of

mindfulness) or as an overall mindfulness score. A potential limitation of the current study is the use of participants' overall mindfulness scores, as opposed to scores on each of the five mindfulness facets.

Future Directions for Research

Future research is needed to build upon the associations found among attachment, TEI, and mindfulness. Further experimentation could shed light upon the potential causal role of mindfulness in the direction of greater TEI. One method by which researchers may investigate this causal role is through utilizing a study design intended to capture changes across time (e.g., longitudinal). Future studies could avoid some of the pitfalls inherent to interpreting data obtained through self-reports by incorporating psychophysiological assessment tools into the measurement of variables (e.g., emotion regulation). One way to address potential problems related to social desirability is to embed a scale (e.g., Social Desirability Scale; Crowne & Marlowe, 1960) designed to measure socially desirable responding within the overall/main instrument. Kluemper (2008) has identified psychophysiological correlates of emotion regulation--which is inextricably linked to the overall construct of emotional intelligence--that have demonstrated success in obtaining detailed data about individuals' efficient use of emotion regulation resources.

The integration of biofeedback assessment measures may provide useful information about changes in participants' physiological indicators of stress (e.g., pulse, blood pressure, or galvanic skin response). This would allow individuals to receive immediate feedback about their physiological state and learn how mindfulness exercises (e.g., deep breathing or progressive muscle relaxation) can decrease anxiety and slow a

rapid heart rate. Psychologists trained in biofeedback would place electrodes on different areas of the client's body to measure heart rate, with results displayed on a monitor. Clients would be guided through various relaxation techniques and view their heart rate variability on a monitor. Researchers could obtain baseline measures of these physiological constructs prior to engaging in mindfulness skills training exercises, which may offer insight into the usefulness of practicing mindfulness as a means of managing stress and regulating emotions. A recent study conducted with college students in a university counseling center setting found that biofeedback training in conjunction with counseling lead to a significantly greater reduction in anxiety than counseling alone (Ratanasiripong, Sverduk, Prince, & Hayashino, 2012). Given the relationship between anxiety-related symptoms and higher levels of attachment-related anxiety, more anxiously attached adults may benefit from a multimodal approach to treatment that includes biofeedback training. As a result of learning how to reduce anxiety through biofeedback, more anxiously attached adults may feel more confident in their own abilities to tolerate distress and regulate emotions. However, future research is warranted to examine the afore-mentioned areas.

In addition, future studies could attempt to generalize findings from the present study by sampling individuals representative of the U.S. adult population, as opposed to college students. Research with the FFMQ has been conducted among clinical and non-clinical samples across a broad range of racial and ethnic groups, although Giovannini et al. (2014) have pointed out the need for further research designed to assess internal consistency and concurrent validity of the FFMQ in other languages. A recent study focused explicitly on the reliability and validity of an Italian version of the FFMQ with a

sample of 559 Italian, Caucasian college students and adults (Giovannini et al., 2014). Results supported the adaptation of the FFMQ among Italian adults and found the Italian version to demonstrate a similar factor structure as the English version (Baer et al., 2006).

This study's findings indicated that college classification appeared to add unique variance in explaining levels of TEI after accounting for attachment, mindfulness, and other demographic variables. Future research could expand upon these findings by explicitly attending to the intersection of college student development with emotional intelligence. College student developmental theories may serve as useful lenses through which to interpret future research findings. The use of student developmental theories (Chickering & Reisser, 1993) as frameworks through which to interpret and guide future research may glean unique insight on the impact of student development across the college years on emotional intelligence. It may also be useful to explore potential differences in TEI levels based on choice of undergraduate major, as Petrides (2010) has reported that adaptive levels of TEI vary based on occupation.

In order to obtain more detailed information about individuals' levels of TEI, the long form of the TEIQue could be used to gather data about specific facets and factors of TEI. Similarly, future use of the FFMQ could glean more specific data in regard to distinct components of overall trait mindfulness by including scores from each of the FFMQ's five mindfulness factors--observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience--within the overall regression model. The inclusion of these specific facets, coupled with overall mindfulness scores, might expand upon this study's findings by uncovering unique predictive effects of each mindfulness facet on global TEI. Additionally, future

assessment of the moderating role of trait mindfulness on the relationship between attachment and TEI could expand upon this study's findings by including the 15 TEI facets and four TEI factors measured by the long form TEIQue (Petrides & Furnham, 2006).

Results from this study suggest that assessment of attachment levels among participants in TEI-building workshops/interventions (Abe et al., 2013) may serve as useful data to guide treatment and measure outcomes. For instance, if participants completed an attachment measure, such as the ECR-R (Fraley et al., 2000), and results highlighted which participants had higher levels of attachment-related anxiety, these individuals could receive additional mindfulness skill training exercises. Mindfulness interventions would be particularly important for this group (i.e., more anxiously attached adults), since results from the present study suggest that more anxiously attached adults may be more likely to have higher levels of TEI if they also demonstrate higher levels of mindfulness. Thus, future research could examine the effectiveness of the intervention.

Assessment of participants' attachment orientation prior to engaging in a half-day workshop, such as Abe et al.'s (2013) workshop, would also provide an opportunity to explore within- and between-groups differences of adults with higher levels of attachment-related anxiety and avoidance as well as adults with lower levels of both anxiety and avoidance (i.e., securely attached adults). As mentioned, this workshop format could be modified or tailored for the specific needs of more anxiously attached adults by including didactic and experiential mindfulness. By adding mindfulness-based intervention(s) to a TEI-building workshop/intervention, researchers may assess the extent to which mindfulness serves a protective role among more anxiously attached

adults that subsequently enables greater gains in TEI. Future research may also go a step further by comparing group differences between more anxiously attached adults who completed the TEI-building workshop with and without mindfulness-based interventions. Although this study did not find a significant moderating role of mindfulness among participants with higher levels of avoidant attachment or secure attachment, future research utilizing an experimental design may be warranted to draw further conclusions on the potential interaction effect of mindfulness for these groups.

Conclusions

The current study has offered additional support for the established relationships between attachment levels, TEI, and mindfulness. As expected based on prior studies, high levels of attachment-related anxiety and avoidance were inversely related to both global TEI and overall mindfulness. This study served to bolster and support the afore-mentioned relationships as well as making a unique contribution to the relevant literature by illuminating a significant moderating role of mindfulness on TEI levels among anxiously attached adults. The impact of the moderating role of mindfulness for individuals with higher levels of attachment-related anxiety implies that mindfulness may serve a protective function in the existence of acquisition of TEI. Despite the afore-mentioned limitations of the present study, the results add additional information to the literature by providing a meaningful contribution to the expanding base of mindfulness research. Specifically, employing mindfulness-based interventions with more anxiously attached adults may lead to greater TEI. Consequently, more anxiously attached adults could receive the wide array of intra- and interpersonal benefits associated with both secure attachment and adaptive levels of emotional intelligence.

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APPENDIX A

PILOT STUDY

Pilot Study

Participants

The target population for the pilot study included all undergraduate students over 18 years of age. For the purposes of the pilot study, the sample pool was gathered through the same type of sample as will be used in the full study, although the undergraduate students were recruited from a mid-sized university in the Rocky Mountain region. Results for categorical demographic variables were as follows: gender, male (n = 8) and female (n = 35); age, 17/younger (n = 1), 18-20 (n = 21), 21-29 (n = 15), 30-39 (n = 3), 40-49 (n = 2), 50-59 (n = 1); race, White (n = 30), Black/African-American (n = 1), Hispanic (n = 3), multiple races (n = 9); and education, high school or equivalent (n = 13), some college / no degree (n = 16), associate degree (n = 4), bachelor degree (n = 6), graduate degree (n = 4).

Procedure

Participants included in the pilot study were recruited through dissemination of links to the complete survey packet to professors and included a brief overview of the study and an invitation to share the link to the survey with any of their undergraduate students. Professors from different departments across campus were located and contacted through use of this university's faculty e-mail directory. Participants were also randomly recruited through use of this university's student e-mail directory. The desired sample size was the 66 for the pilot study, although it was not reached. This sample size was determined based on Green's (1991) guidelines for multiple regression analysis, for an anticipated medium effect size, power of .8, alpha level of .05, and use of two continuous explanatory variables (attachment-related anxiety and avoidance levels).

Data Analysis

Frequencies for categorical variables and measures of central tendency for continuous variables were examined. The initial sample pool consisted of 55 respondents, with 43 (72%) completing the survey in its entirety and 12 participants dropping out prior to completion. Respondents with any missing data were excluded from analysis procedures beyond obtaining frequencies. Response rate is unknown, as survey links were disseminated via e-mail and may have been forwarded to any number of potential participants.

Once data collection was completed, SPSS (version 20, Windows 7) was used to calculate descriptive and frequency statistics to gather information from the demographic questions and ascertain how representative the sample pool is of the target population. An alpha level of .05 was used throughout this study. Reliability analyses were performed on each scale to assess internal consistency properties for the sample. A hierarchical multiple regression analysis was used to determine the direction and strength of the relationship between attachment levels and TEI and the potential moderating effect of overall trait mindfulness on the relationship between attachment levels and TEI. Gall, Gall, and Borg (2007) stated that this type of analysis is appropriate for determining the correlation between a criterion variable (i.e., the variable being explained: TEI) and a combination of two more explanatory variables (i.e., mindfulness as a moderating variable and attachment levels as explanatory variables).

It was hypothesized that level of mindfulness would play a significant role in determining the direction and strength of the relationship between attachment and TEI. Outcomes yielded from the multiple regression analysis provided exploratory information

as to how much variance in levels of global TEI may be explained by overall trait mindfulness and attachment levels. Results from the multiple regression analysis also provided exploratory information on the joint effect between overall trait mindfulness and attachment levels to understand the potential moderating role of mindfulness on the relationship between attachment levels and TEI. The multiple regression analysis yielded an adjusted squared multiple correlation coefficient (R^2) for the overall model and for each step in the hierarchical regression.

The value of R^2 was expected to increase as each additional variable was entered into the multiple regression analysis, with the increment in R^2 tested at each step. The demographic variables were included in the first step of the hierarchical regression equation to explore to degree to which demographic variables explain TEI as potentially extraneous variables. In the multiple regression analysis, overall trait mindfulness, levels of attachment-related anxiety and avoidance, and their products were entered into the regression model in the second, third and fourth steps, respectively.

Prior to interpreting the results, the following assumptions of multiple regressions were tested: normality of residuals, linearity, independence of observations and no variables measured without excessive error. The assumption of normality of residuals was assessed and met using histograms, scatterplots, and a Shapiro-Wilk (S-W) test, with attachment-related anxiety, attachment-related avoidance, overall trait mindfulness, and TEI all yielding significance levels greater than .05. The same analyses will be used with the full study.

Results

Measures of central tendency for continuous variables were examined, yielding the following descriptive data: attachment-related anxiety (M = 3.19, SD = .95, n = 43); attachment-related avoidance (M = 3.92, SD = .89, n = 43); overall trait mindfulness (M = 3.42, SD = .47, n = 43); and TEI (M = 4.71, SD = .79, n = 43). Frequencies were examined to determine the number of participants who completed each scale, with results indicating the following: ECR-R (N = 55); FFMQ (n = 48); and TEIQue-SF (n = 43). It is possible that the TEIQue-SF had the largest amount of missing data (n = 12) due to this instrument following the ECR-R and FFMQ, respectively, in the survey packet.

Hierarchical regression analysis indicated that mindfulness contributed a statistically significant increase in R^2 at step two, after controlling for education, age, and race at step one, F (1, 38) = 26.81, $p < .001$. This R^2 change and relevant F test indicates that mindfulness contributed a significant amount of the explained variance. Findings from step three of the regression analysis indicated that attachment levels did not appear to contribute a significant incremental amount of variance in the overall model, after controlling for mindfulness levels and demographic variables of interest, F (2, 36) = .01, p = .988. Once product variables were included, examining the potential moderating role of mindfulness, an additional 3.4% of the variance in levels of TEI was explained, F (2, 34) = .34, p = .342.

Discussion

The objective of the pilot study was to examine the extent to which individuals' levels of mindfulness moderate the relationships between adult attachment levels in close relationships and levels of trait emotional intelligence. Despite limitations in sample size,

correlation results suggested a potential trend toward individuals' with higher levels of attachment-related anxiety reporting lower levels of mindfulness. This potential relationship was explored in greater depth and with a larger sample size in the current study. Levels of mindfulness were shown to contribute a significant amount of variance in levels of the variable being examined, trait emotional intelligence. This finding is supported by prior research indicating a significant relationship between levels of these two constructs. When the moderating role of mindfulness on the relationships between attachment levels and TEI was assessed, a small amount of variance in levels of TEI was explained, although these results were not significant within the pilot study and future research is warranted.

Lack of support for the pilot study's research hypotheses may have been impacted by the clear limitation of obtaining a sample size ($N = 43$) that was unable to meet Green's (1991) multiple regression suggestions necessary to obtain sufficient statistical power to detect a medium effect size within a sample of at least 91 participants. The current study endeavored to obtain a larger sample size by recruiting respondents online via a greater number of sources. In addition, this study avoided the pilot study's limitation related to the amount of time respondents had to both receive and complete the survey packet (i.e., approximately two weeks). By gathering a larger sample pool, the likelihood of obtaining a larger effect size, finding significant results, and increasing statistical power was likely to increase.

Given the inherent difficulty involved in use of online survey methods of obtaining an accurate response rate, it was unclear in the pilot study how many potential participants received the study or elected not to participate. Based on Sheenan and Hoy's

(1997) finding that reminder messages have the potential to raise response rates by as much as 25% in online surveys disseminated via e-mail, this study sought to address the potential for nonresponse by sending e-mail reminders to individuals recruited to participate in the study. Multiple limitations are involved in self-report instruments, such as the response distortion of engaging in social desirability bias. Though it is unrealistic to eliminate this bias altogether, the current study explicitly reinforced what cautionary methods (e.g., reminding participants that identifying information would not be paired with their responses) would be taken to ensure participants' confidentiality to the highest extent possible.

APPENDIX B

DEMOGRAPHIC QUESTIONS

Demographic Questions

1. Are you male or female?

☐ Male
☐ Female
☐ Other (please specify)

2. Indicate your age.

_____

3. Select the response that best describes your race.

☐ White
☐ Black or African-American
☐ Hispanic or Latino(a)
☐ Native American or Alaskan Native
☐ Other (please specify)
☐ Asian
☐ Native Hawaiian or other Pacific Islander
☐ From multiple races

4. Indicate your current college classification.

☐ Freshman
☐ Sophomore
☐ Junior
☐ Senior

5. Meditation is "an intentional and self-regulated focused of attention, whose purpose is to relax and calm the mind and body" (Dorland's Medical Dictionary for Health Consumers, 2007).

Mindfulness meditation is "a technique of meditation in which distracting thoughts and feelings are not ignored, but are rather acknowledged and observed nonjudgmentally as they arise to create a detachment from them and gain insight and awareness" (Mosby's Medical Dictionary, 8th ed., 2009).

Do you currently practice <u>mindfulness meditation</u> at least 1-2 times per week?

☐ Yes
☐ No

APPENDIX C

EXPERIENCES IN CLOSE RELATIONSHIPS SCALE—REVISED

Experiences in Close Relationships Scale – Revised (ECR-R)

Relationships

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by clicking a circle to indicate how much you agree or disagree with the statement.

Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

1. I'm afraid that I will lose my partner's love.

2. I often worry that my partner will not want to stay with me.

3. I often worry that my partner doesn't really love me.

4. I worry that romantic partners won't care about me as much as I care about them.

5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.

6. I worry a lot about my relationships.

7. When my partner is out of sight, I worry that he or she might become interested in someone else.

8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.

9. I rarely worry about my partner leaving me.

10. My romantic partner makes me doubt myself.

11. I do not often worry about being abandoned.

12. I find that my partner(s) don't want to get as close as I would like.

13. Sometimes romantic partners change their feelings about me for no apparent reason.

14. My desire to be very close sometimes scares people away.

15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.

16. It makes me mad that I don't get the affection and support I need from my partner.

17. I worry that I won't measure up to other people.

18. My partner only seems to notice me when I'm angry.

19. I prefer not to show a partner how I feel deep down.

20. I feel comfortable sharing my private thoughts and feelings with my partner.

21. I find it difficult to allow myself to depend on romantic partners.

22. I am very comfortable being close to romantic partners.

23. I don't feel comfortable opening up to romantic partners.

24. I prefer not to be too close to romantic partners.

25. I get uncomfortable when a romantic partner wants to be very close.

26. I find it relatively easy to get close to my partner.

27. It's not difficult for me to get close to my partner.

28. I usually discuss my problems and concerns with my partner.

29. It helps to turn to my romantic partner in times of need.

30. I tell my partner just about everything.

31. I talk things over with my partner.

32. I am nervous when partners get too close to me.

33. I feel comfortable depending on romantic partners.

34. I find it easy to depend on romantic partners.

35. It's easy for me to be affectionate with my partner.

36. My partner really understands me and my needs.

APPENDIX D

FIVE FACET MINDFULNESS QUESTIONNAIRE

Five Facet Mindfulness Questionnaire (FFMQ)

Mindfulness

Please rate each of the following statements using the scale provided. Respond to each statement by clicking a circle related to the number that best describes your own opinion of what is generally true for you.

Never or Very Rarely True	Rarely True	Sometimes True	Often True	Very Often or Always True

1. When I'm walking, I deliberately notice the sensations of my body moving.

2. I'm good at finding words to describe my feelings.

3. I criticize myself for having irrational or inappropriate emotions.

4. I perceive my feelings and emotions without having to react to them.

5. When I do things, my mind wanders off and I'm easily distracted.

6. When I take a shower or bath, I stay alert to the sensations of water on my body.

7. I can easily put my beliefs, opinions, and expectations into words.

8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.

9. I watch my feelings without getting lost in them.

10. I tell myself I shouldn't be feeling the way I'm feeling.

11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.

12. It's hard for me to find the words to describe what I'm thinking.

13. I am easily distracted.

14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.

15. I pay attention to sensations, such as the wind in my hair on sun on my face.

16. I have trouble thinking of the right words to express how I feel about things.

17. I make judgments about whether my thoughts are good or bad.

18. I find it difficult to stay focused on what's happening in the present.

19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.

20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

21. In difficult situations, I can pause without immediately reacting.

22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.

23. It seems I am "running on automatic" without much awareness of what I'm doing.

24. When I have distressing thoughts or images, I feel calm soon after.

25. I tell myself I shouldn't be thinking the way I'm thinking.

26. I notice the smells and aromas of things.

27. Even when I'm feeling terribly upset, I can find a way to put it into words.

28. I rush through activities without being really attentive to them.

29. When I have distressing thoughts or images I am able to just notice them without reacting.

30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

32. My natural tendency is to put my experiences into words.

33. When I have distressing thoughts or images, I just notice them and let them go.

34. I do jobs or tasks automatically without being aware of what I'm doing.

35. When I have distressing thoughts or images, I judge myself as good or bad, depending on what the thought/image is about.

36. I pay attention to how my emotions affect my thoughts and behavior.

37. I can usually describe how I feel at the moment in considerable detail.

38. I find myself doing things without paying attention.

39. I disapprove of myself when I have irrational ideas.

APPENDIX E

TRAIT EMOTIONAL INTELLIGENCE QUESTIONNAIRE--SHORT FORM

Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF)

Emotions

Please answer each statement below by clicking a circle related to the number that best reflects your degree of agreement or disagreement with that statement. Do not think too long about the exact meaning of the statements. Work quickly and try to answer as accurately as possible. There are no right or wrong answers. There are seven possible responses to each statement ranging from 'Completely Disagree' (number 1) to 'Completely Agree' (number 7).

Completely Disagree	2	3	4	5	6	Completely Agree

1. Expressing my emotions with words is not a problem for me.

2. I often find it difficult to see things from another person's viewpoint.

3. On the whole, I'm a highly motivated person.

4. I usually find it difficult to regulate my emotions.

5. I generally don't find life enjoyable.

6. I can deal effectively with people.

7. I tend to change my mind frequently.

8. Many times, I can't figure out what emotion I'm feeling.

9. I feel that I have a number of good qualities.

10. I often find it difficult to stand up for my rights.

11. I'm usually able to influence the way other people feel.

12. On the whole, I have a gloomy perspective on most things.

13. Those close to me often complain that I don't treat them right.

14. I often find it difficult to adjust my life according to the circumstances.

15. On the whole, I'm able to deal with stress.

16. I often find it difficult to show my affection to those close to me.

17. I'm normally able to "get into someone's shoes" and experience their emotions.

18. I normally find it difficult to keep myself motivated.

19. I'm usually able to find ways to control my emotions when I want to.

20. On the whole, I'm pleased with my life.

21. I would describe myself as a good negotiator.

22. I tend to get involved in things I later wish I could get out of.

23. I often pause and think about my feelings.

24. I believe I'm full of personal strengths.

25. I tend to "back down" even if I know I'm right.

26. I don't seem to have any power at all over other people's feelings.

27. I generally believe that things will work out fine in my life.

28. I find it difficult to bond well even with those close to me.

29. Generally, I'm able to adapt to new environments.

30. Others admire me for being relaxed.

APPENDIX F

ELECTRONIC CONSENT FORM

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project Title: General Attitudes about Close Relationships, Mindfulness & Emotions
Researcher: Laura Schenck, M.A., Counseling Psychology
E-mail: LauraKSchenck@gmail.com
Research Advisor: Stephen Wright, Ph.D., Counseling Psychology
E-mail: Stephen.Wright@unco.edu Phone: 970/351-1838

Purpose and Description: The primary purpose of this study is to understand patterns in close relationships, basic dispositions of mindfulness in daily life, and self-perceived beliefs in abilities to identify, manage, and respond to emotions.

For the purposes of this study, you will be asked to respond to a brief set of questionnaires. For these questionnaires, your identity will remain anonymous through assignment of an arbitrary number to your responses for the purposes of data analysis. Every effort will be made to keep information confidential, although due to the nature of electronic responding, confidentiality cannot be guaranteed. Your responses will be downloaded and stored on a password-protected computer to maximize confidentiality. Completion time is anticipated to be between 20 and 30 minutes.

There are minimal risks to participating in this study; no more risk than would be involved in general reflection on your general attitudes about yourself and others. You may experience positive benefits from participating in this study as a result of becoming more self-aware of basic processes involved in relating to yourself, others, and the world. It is also possible that you will have a neutral experience engaging in this study.

You will have the option to enter into a random drawing for one of five $15 iTunes gift cards. Compensation will be randomly awarded via e-mail at the end of this study. Your e-mail address will not be associated with your survey responses or used for any purposes other than potential notification of compensation.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please complete the questionnaire if you would like to participate in this research. By completing the questionnaire, you will give us permission for your participation. You may keep this form for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-2161.

APPENDIX G

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

UNIVERSITY of NORTHERN COLORADO

Institutional Review Board

DATE:	February 19, 2013
TO:	Laura Schenck, M.A.
FROM:	University of Northern Colorado (UNCO) IRB
PROJECT TITLE:	[400358-1] Attachment in Close Relationships and Trait Emotional Intelligence: The Moderating Role of Mindfulness
SUBMISSION TYPE:	New Project
ACTION:	APPROVAL/VERIFICATION OF EXEMPT STATUS
DECISION DATE:	February 18, 2013

Thank you for your submission of New Project materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

Thanks for an excellent submission.

Best Wishes,

Maria Lahman, Co-Chair of IRB

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.

APPENDIX H

ECR-R DIMENSIONS GROUPED INTO ATTACHMENT CATEGORIES

ECR-R dimensions grouped into attachment categories

	Anxiety = > MANX	Anxiety = < MANX
Avoidance = > MAVOID	Fearful	Dismissing
Avoidance = < MAVOID	Preoccupied	Secure

APPENDIX I

MANUSCRIPT

Adult Attachment in Close Relationships and Trait Emotional Intelligence: The Moderating Role of Mindfulness

Laura K. Chang

University of Northern Colorado

Abstract

The moderating role of mindfulness on the relationships between trait emotional intelligence (TEI) and both attachment-related anxiety and avoidance among college students ($N = 510$) was explored in the present study. As expected, results suggested a strong relationship between levels of mindfulness and TEI. In the interest of assessing the degree to which mindfulness explained variance in participants' TEI levels (while accounting for attachment levels), a hierarchical multiple regression was conducted. Data analysis indicated that college classification (e.g., freshman), attachment-related anxiety, mindfulness, and the moderator variable of attachment-related anxiety with mindfulness made unique and significant contributions to the overall explained variance in TEI levels. Mindfulness did not explain a significant among of variance in TEI levels among participants who reported higher levels of attachment-related avoidance. Findings were interpreted and expanded upon through the lens of attachment theory as both a relational and emotion-regulation model. Practice implications were discussed as they may meet the unique needs of adults with higher levels of attachment-related anxiety.

Introduction

The ability to be still in the present moment, mindful of impulses to act, and trust that the right action will emerge naturally is complex. This task is both simple and difficult. For those who have struggled to develop an inner sense of attachment security, mindfulness of the present moment, and belief in their own emotional competency, this task may very well seem impossible. Attachments developed during early childhood through repetitive interactions with parents or primary caregivers have a profound impact on the child's future abilities as an adult to develop effective interpersonal skills and experience an intrinsic sense of self-confidence that leads to both self-determination and effective coping skills in the face of adversity (Hamarta, Deniz, & Saltali, 2009).

Research indicates a relationship between attachment style and emotional intelligence; general findings suggest a significant positive correlation between secure attachment style and emotional intelligence (Kafetsios, 2004; Kim, 2005; Peck, 2003; Zimmermann, 1999). Based on this established relationship between attachment style and emotional intelligence and the emotional and interpersonal difficulties that individuals with insecure attachment styles may face as adults, it is important to consider what traits or abilities these individuals may learn and develop in order to increase their capacity for stronger emotional self-efficacy. Specifically, it is possible that individuals may develop trait mindfulness and research investigating trait mindfulness as it relates to attachment style and emotional intelligence is warranted.

Attachment

It is within the early developmental context that individuals acquire secure or insecure attachments, which may contribute to the manifestation of individual differences in one's perceived ability to identify, manage, and respond to intrapersonal and interpersonal emotional information (i.e., trait emotional intelligence; TEI). People naturally demonstrate more or less prominent dispositional tendencies toward mindfulness, which enables a nonjudgmental, curious, and accepting attitude toward the present moment, including the full range of emotional experiences (Ciarrochi & Blackledge, 2006). It is possible that trait mindfulness plays a meaningful role in explaining one's level of emotional intelligence, while accounting for the generally stable nature of the individual's attachment style over the lifespan.

Adult attachment styles in close relationships are developed through early repetitive interactions with parents and/or primary caregivers that are experienced as either anxiety-provoking, potentially leading to the development of an insecure attachment, or rewarding and stable, ostensibly building a secure attachment bond (Bowlby, 1973). The degree to which an individual manifests a secure or an insecure attachment style in adulthood is measured along two continuous dimensions of attachment-related anxiety and attachment-related avoidance (Fraley & Waller, 1998; Fraley, Waller & Brennan, 2000), with these scores providing insight into the extent to which the individual exhibits a secure or an insecure pattern of relating to others. Conceptually, increasingly secure individuals actively engage others in relationships and are not anxious around others. These securely attached individuals may have highly

developed levels of emotional intelligence, allowing them to effectively interpret and manage emotional information without an underlying sense of anxiety or avoidance.

Emotional Intelligence

The basic concept behind emotional intelligence (EI) is that there are significant differences between individuals regarding the manner and extent to which they pay attention to, process, and then utilize emotional information that is both intrapersonal (within the individual) and interpersonal (within the context of social interactions) (Hamarta, et al., 2009; Petrides & Furnham, 2006). Emotional intelligence has been conceptualized in various ways (e.g., as an ability versus a trait), although there is significant overlap between various definitions and facets of EI. Petrides (2009) provides the example of emotion perception (i.e., clarity about one's own and others' feelings) as a facet that is common to various conceptualizations of EI, although the primary difference between EI models relates to the manner in which the construct is measured.

Trait emotional intelligence (TEI) is considered to be an individual's self-perceptions of his or her own emotional competence, or emotional self-efficacy (Petrides, Pita, & Kokkinaki, 2007). Individuals with healthy levels of TEI tend to have more highly developed beliefs in their capacity for overall well-being, effective social interactions, self-control, and emotionality (Petrides, 2009). The general concept of self-efficacy is defined as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura, 1994, p. 71). From a TEI perspective, emotional self-efficacy is a clearly identifiable personality trait that is associated with many emotional, behavioral, and social benefits. One's sense of strong emotional self-efficacy, or high level of TEI, naturally transitions

into an individual's capacity to demonstrate and experience dispositional mindfulness in daily living.

Mindfulness

Trait mindfulness is a dispositional tendency toward awareness and acceptance of the present moment, typified by a curious and nonjudgmental attitude toward internal (e.g., thoughts, emotions, and sensations) and external events (e.g., interpersonal interactions and engagement with the material world) (Brown, Ryan, & Creswell, 2007). The trait-like form of mindfulness discussed in the current study focuses on an "intentional, reflective style of introspection or self-observation that… differs from concentrative meditation" (Lau et al., 2006, p. 1448). Development of trait mindfulness through practice (Bishop et al., 2004) may foster increases in awareness and decreases in impulsive reactivity to emotions (Kabat-Zinn, 1994). This attitude may allow individuals to more effectively understand and utilize emotions and have more positive interactions with others. There is a strong body of evidence correlating trait mindfulness with greater subjective well-being (Baer et al., 2008; Brown et al., 2009; Brown & Ryan, 2003; Falkenström, 2010; Howell et al., 2008). Furnham and Petrides (2003) found that trait EI explained over 50% of the total variance in happiness, with this relationship persisting in the face of the Big Five personality factors: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (Costa & McCrae, 1992). Research indicates that individuals with a secure attachment style experience higher levels of psychological well-being (Love & Murdock, 2004) and report greater levels of emotion regulation and adjustment (Cooper, Shaver, & Collins, 1998). While a considerable amount of research indicates significant positive relationships between trait mindfulness

and multiple healthy psychological constructs, further research is needed to understand the potential moderating role of mindfulness on the relationship between attachment style and emotional intelligence.

In clinical settings, the goals of incorporating mindfulness practices into treatment are to increase insight into the ways in which patterns of overidentification with and cognitive reactivity to sensations, thoughts, and emotions serve to increase subjective levels of stress and emotional distress (Shapiro & Carlson, 2009). Given that mindfulness-based clinical interventions are designed to increase one's ability to more effectively interpret, regulate, and respond to emotional states (Shapiro & Carlson, 2009), it is worth examining the potential moderating role of mindfulness on the relationship between anxious and avoidant attachment levels and emotional intelligence. To date, research has not examined this area and this is a problem worth investigation since attachment styles are relatively stable across time (Fraley, 2002; Fraley & Brumbaugh, 2004), while mindfulness is a skill and attitude that can be cultivated and strengthened through practice (Bishop et al., 2004), and greater trait emotional intelligence is associated with a wealth of overall benefits to well-being (Keng, Smoski, & Robins, 2011; Schutte & Malouff, 2011).

In summary, due to the generally stable nature of attachment style over one's lifespan, the numerous intrapersonal and interpersonal difficulties that individuals with insecure attachments face in adulthood, and the mounting evidence that higher levels of mindfulness have on subjective well-being, happiness, and emotional intelligence, it is vital to understand the potential role that mindfulness plays in the relationship between anxious and avoidant attachment levels and emotional intelligence.

Theoretical Framework

Attachment theory. In the past few decades, attachment theory (Bowlby, 1969) has become established as a prominent and extensively researched theoretical framework utilized in the study of personality development, interpersonal relationships, and emotional regulation (Fraley et al., 2011) and it was applied to the current study to understand the relationships among the constructs of attachment-related avoidance and anxiety, emotional intelligence, and mindfulness. Attachment theorists contend that relational patterns and interactions initially develop within the parent-child relational context; these patterns and interpersonal expectations are maintained and repeated in adult relationships (Ainsworth et al., 1978; Bowlby, 1969). A core assumption of attachment theory involves the premise that individuals construct mental representations, or working models, of themselves and others based on interpersonal interactions. Based on these mental representations, individuals are thought to develop self-schemas (i.e., beliefs and ideas about oneself; Markus, 1977) and interpret, understand, and interact within the larger social environment in particular ways.

The ability to effectively identify, manage, and utilize one's emotions, or emotion regulation, is an important aspect of emotional intelligence. Attachment theory has been considered an emotional-regulation model as well, in the sense that "internal working models of attachment [can] be understood as the entire rules that orient an individual's emotional reactions to stressful situations" (Kobak & Sceery, 1988, p. 142). Bretherton and Munholland (1999) postulated that interactions with others are guided by expectations and memories that emanate from internal working models, which then serve to impact and enable adaptive or maladaptive evaluation of future interpersonal

interactions. Attachment style develops within the context of meaningful early relationships with parents or primary caregivers and relates to the child's experience of "felt security" within the relational bond (Ainsworth, 1982).

Attachment theory and research suggest that individuals with insecure attachments tend to use maladaptive or ineffective cognitive strategies in attempts to manage emotional responses. Studies have found that attachment-related avoidance is related to a tendency toward suppression and denial of emotional states (Mikulincer, Shaver, & Pereg, 2003) and attachment-related anxiety is connected to rumination and overly intensifying negative emotional responses (Mikulincer & Shaver, 2007). These connections between insecure attachments and maladaptive strategies of emotion regulation provide insight into the difficulties that individuals with insecure attachments may face in the development of emotional intelligence.

The concept of mentalization arises out of attachment theory, and refers to a "core process of human social functioning and self-regulation, involved in the establishment of robust links between personally meaningful early experiences and their representation" (Bouchard et al., 2008, p. 48). It is thought that secure mental representations of early attachment bonds are vital components of favorable developmental outcomes and that the impact of attuned caregiving in one's early years endures throughout the lifespan (Waters et al., 2000). Attachment has become increasingly understood in relation to self-regulatory processes (Polan & Hofer, 1999), which are at the foundation of multiple facets of trait emotional intelligence (Petrides, 2009). Fonagy and Target (2002) found that the relationship between infant and adult adaptation appears to be mediated by important self-regulatory capacities, such as regulation of the stress response, attention,

and mentalization. A parent or primary caregiver's capacity to demonstrate a more complex conceptualization of mentalization, also referred to as reflectiveness, appears to be "linked with attachment insofar as a caregiver's mindfulness about a child's mental states appears as a key mediator of the transmission of attachment" (Bouchard et al., 2008, p. 48). By understanding the impact that a primary caregiver's level of mindful attunement to a child's mental states has on the development of the child's attachment, the connections between trait mindfulness and attachment begin to become clearer. Attachment is useful in understanding the construct of mindfulness; part of being mindful involves a tendency toward feeling secure and stable with one's own presence and a willingness to sit with uncomfortable thoughts, emotions, and sensations (Kabat-Zinn, 1994). Mindfulness also involves an attitude of curiosity and nonjudgment toward the present, even when experiencing distressing relationship interactions or losses.

Research indicates that more insecurely attached individuals experience higher levels of psychological distress (Davila & Bradbury, 2001), destructive behaviors during conflict-related discussions in close relationships (Collins & Feeney, 2000), and lower relationship satisfaction and declines in relationship quality over time than securely attached individuals (Davila, Karney, & Bradbury, 1999). When one is overwhelmed or unable to effectively manage intense emotions or distress, it is increasingly difficult to become mindful (Linehan, 1993a), as mindfulness involves acceptance and tolerance of uncomfortable thoughts and emotions. It would follow that individuals with high levels of anxious or avoidant attachment may struggle to maintain an attitude of mindfulness in the face of (real or perceived) interpersonal threats and internal distress.

Purpose for the Study

The purpose of this study is to examine the potential moderating role of trait mindfulness on the relationships between trait emotional intelligence and both attachment-related avoidance and anxiety. Both adult attachment and TEI are considered to be relatively stable constructs across time (Fraley, 2002; Fraley & Brumbaugh, 2004; Smith, Ciarrochi, & Heaven, 2008), whereas mindfulness is a skill that can be learned and practiced, and ultimately becomes a stable trait (Bishop et al., 2004). In this study, I will examine the role of mindfulness in explaining anxious and avoidant attachment levels and how the strength or direction of the relationship between these attachment levels and TEI may differ depending on individuals' levels of mindfulness. Based on prior research, it is anticipated that there will be a significant relationship between higher levels of anxious and avoidant attachment and lower levels of TEI. It is also expected, based on prior findings, that there will be a significant positive relationship between trait mindfulness and TEI.

The literature provides consistent linkages between these aforementioned constructs in meaningful ways, but has yet to examine all three simultaneously and provide insight into the potential moderating role of trait mindfulness on the relationship between anxious and avoidant attachment levels and TEI. Perhaps individuals with anxious and avoidant attachment levels can strengthen their levels of emotional self-efficacy through learning to be more mindful in everyday living (i.e., acquiring trait mindfulness through practice; Bishop et al., 2004). Furthermore, this study provided useful clinical information for psychotherapists by providing insight into the way in

which clients' TEI may be understood, based on their levels of mindfulness. Therefore, the current study investigated the following research questions:

Research Questions

RQ1 To what extent will levels of trait mindfulness moderate the relationship between levels of attachment related avoidance and levels of emotional intelligence?

HY1 The relationship between levels of attachment related avoidance and levels of TEI will significantly change depending on the presence and level of trait mindfulness.

RQ2 To what extent will levels of trait mindfulness moderate the relationship between levels of attachment related anxiety and levels of emotional intelligence?

HY2 The relationship between levels of attachment related anxiety and levels of TEI will significantly change depending on the presence and level of trait mindfulness.

Methods

Participants

The target population for this study included students over 18 years of age. The sample in this study consisted of 510 participants who completed the entire survey; respondents were asked to respond to each item in order to complete the survey, eliminating the presence of missing data. The majority of participants were within the 18 - 20 age range (n = 195, 38.2%), followed by the 21 - 24 age range (n = 100, 19.6%). Most participants were female (n = 390, 76.5%) and identified themselves as Caucasian (n = 337, 66.1%). Regarding college classification, 346 participants (67.8%) were undergraduate students, 133 (26.1%) were graduate students, and the remaining 31 (6.1%) participants endorsed the category "other." Participants were classified as "regular meditators" according to Baer et al.'s (2008) inquiry into individuals' self-report

of engaging in a "currently ongoing meditation practice… of at least once or twice a week" (pp. 331-332). Participants consisted of 144 (28.2%) regular meditators and 366 (71.8%) non-meditators. Of the 510 participants, 103 (20.2%) elected to participate in the random prize drawing for one of three $15 iTunes gift cards. After all data was collected, three participants were randomly selected and notified by e-mail of their award. See Table 1 for additional information regarding demographics of this sample.

Procedure

The sample pool was obtained using a nonprobability convenience sample of college students from three universities in the United States and through the professional website LinkedIn. Participants were recruited through e-mail dissemination to professors and via public student e-mail addresses. Participants were also recruited through a link to the survey on LinkedIn's higher education groups.

Instruments

Experiences in Close Relationships Scale – Revised. The Experiences in Close Relationships Scale – Revised (ECR-R; Fraley et al., 2000) is a 36-item self-report questionnaire designed to measure adult attachment levels in close relationships in terms of attachment-related anxiety and avoidance, with low scores on each of these dimensions reflecting an increasingly secure attachment level. The ECR-R has two subscales (i.e., attachment-related anxiety and avoidance) that consist of 18 items each, with a possible range of scores from 18 to 126 (Fraley, Waller, & Brennan, 2000). Participants were asked to rate the degree to which they agreed that each statement described their experiences in past or present close relationships, represented on a 7-point Likert-type scale (*1 = strongly disagree, 7 = strongly agree*). Higher scores on either the

attachment-related anxiety or avoidance subscale indicate concomitantly higher levels of attachment-related anxiety or avoidance. Confirmatory and factor analyses conducted by Sibley, Fischer and Liu (2005) suggested that the ECR-R is a replicable and reliable self-report measure of levels of attachment-related anxiety ($\alpha = .93$) and avoidance ($\alpha = .94$) in adult romantic attachment. Pepping, Davis, and O'Donovan (2013) found high reliability for both attachment-related anxiety scores ($\alpha = .94$) and avoidance scores ($\alpha = .95$) in a sample of 572 undergraduate students. Fairchild and Finney (2006) found the ECR-R to demonstrate good internal consistency for both subscale scores ($\alpha \geq .90$) and good construct validity evidence within a sample of undergraduate students ($N = 397$).

Five Facet Mindfulness Questionnaire. The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006) is a 39-item self-report questionnaire, with 19 reverse-scored items, designed to assess mindfulness as a multifaceted trait-like proclivity toward mindfulness in daily living in terms of observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. The first four subscales mentioned consist of eight items each, and the nonreactivity to inner experience subscale consists of seven items. Participants were asked to rate the degree to which each statement described their experience, as represented on a 5-point Likert-type scale (*1 = never or rarely true, 5 = very often or always true*). The FFMQ is currently considered "one of the most empirically-based scales assessing mindfulness" (Heeren et al., 2011, p. 147). The FFMQ has demonstrated high internal consistency of scores ($\alpha = .81$) and incremental validity in the prediction of psychological symptoms among a sample of 572 college students (Pepping, Davis, & O'Donovan, 2013).

Trait Emotional Intelligence Questionnaire – Short Form. The Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF; Petrides & Furnham, 2006) is a 30-item self-report questionnaire, assessing global trait emotional intelligence (TEI) as an individual's self-perceptions of emotional abilities in day-to-day life. Participants were asked to rate each item based on the degree to which they agreed or disagreed with each statement, as represented on a Likert-type scale (*1 = completely disagree, 7 = completely agree*). Global TEI adheres to a generally normal distribution, with scores falling in the top and bottom 3% of the distribution being markedly atypical. TEI scores were interpreted based on where each score fell in the sample distribution: high (70-100%), medium (31-69%), or low (0-30%). High or low TEI scores are not necessarily adaptive or maladaptive. Petrides (2009) stated, "Very high TEIQue scores are indicative of hubris and self-promotion… [and] low trait EI scorers are more likely than their high-scoring counterparts to be straightforward and less likely to be affected by a need for self-verification and image management" (p. 9). The TEIQue-SF has demonstrated good internal consistency of scores ($\alpha = .88$) (Petrides, 2006), and criterion validity (Mikolajczak, Luminet, Leroy, & Roy, 2007) among college students.

Data Analysis

The independent (explanatory) variables were attachment-related avoidance and attachment-related anxiety in close relationships, the moderating variable was overall mindfulness, and the dependent (outcome) variable was global trait emotional intelligence. Attachment levels in close relationships were assessed as continuous variables, based on the degree to which participants endorsed items indicative of attachment-related anxiety or avoidance. Once data were collected, SPSS (version 21,

Macintosh OS X 10.8.4) was used to calculate descriptive and frequency statistics to gather information from the demographic questions (see Table 2).

A hierarchical multiple regression analysis was used to determine the direction and strength of the relationship between attachment levels and TEI levels and the potential moderating effect of mindfulness levels on the relationship between attachment levels and TEI levels. The following basic assumptions inherent to multiple regression analyses were tested: normality of residuals, independence of observations, and constant variance (Pallant, 2010). The assumption of minimal multicollinearity was met by examining the correlation matrix, wherein correlations between scales did not reach or exceed .90 (Kline, 2011). The regression assumption of minimal multicollinearity was also assessed and met by examining VIFs. Collinearity statistics indicated that VIF values for continuous variables of interest ranged from 1.02 – 1.63, which is markedly less than the generally accepted thresholds of 4 or 10 discussed in the literature (e.g., O'Brien, 2007). Scatterplots, histograms, normal probability plots, and a Kolmogorov-Smirnov (K-S) test were produced to assess for normality of residuals (Table 3). Standardized residuals ranged from - 3.66 to 3.74 (*SD* = .99). Normal P-P plots displayed reasonably straight lines, suggesting a normal distribution of scores.

The multiple regression analysis provided an adjusted squared multiple correlation coefficient (R^2) for the model as a whole and for each block entered into the hierarchical regression equation (Draper & Smith, 1998). It was anticipated that the value of adjusted R^2 would increase with each step of the hierarchical regression model; incremental changes in values of adjusted R^2 were assessed at each step (Huck, 2008). Step one of the hierarchical regression equation involved entering the demographic

variables of interest: age, sex, race, current college classification, and regular mindfulness meditator status. In step two, attachment anxiety and avoidance were entered, followed by mindfulness in step three. Attachment variables were entered prior to mindfulness due to general consensus within the research that attachment style is relatively stable and enduring across the lifespan (e.g., Bowlby, 1969; Chopik, Edelstein, & Fraley, 2013). The two product variables of interest were entered in step four to test for the moderating effect of mindfulness on the relationship between attachment and TEI levels. As predictor variables were entered into the equation, adjusted R^2 values sequentially increased, which accounted for the amount of variance explained above and beyond the block of predictor variables entered in the previous step (Huck, 2008).

Results

The value for Cook's Distance (.065) was checked to explore the potential impact of outliers on the regression model (Pallant, 2010). The maximum value for Cook's Distance was less than 1, indicating no serious problems from the standardized residual values falling outside of the -3.0 – 3.0 range (Tabachnick & Fidell, 2007). Skewness and kurtosis statistics indicated non-significant values ($p > .05$) for the FFMQ Acting with Awareness subscale, FFMQ overall mindfulness, and global TEI. These values indicate normality of distribution. Conversely, K-S values for the remaining variables were significant ($p < .001$), suggesting violation of the assumption of normality, which can be common in large samples (Pallant, 2010). The Durbin-Watson *d* statistic was used to assess for serial correlation among residuals. Values range from 0 to 4, with values close to 0 or 4 suggesting a strong positive or negative correlation, respectively. The Durbin-Watson *d* statistic was 1.87, indicative of no serial correlation (Durbin & Watson, 1951).

An independent samples t-test was performed to explore any potential differences in levels of TEI between the meditator and non-meditator groups. There was a significant difference in TEI scores for meditators ($M = 5.28$, $SD = .75$; $t\ (508) = 2.71$, $p = .01$) and non-meditators ($M = 5.08$, $SD = .78$); $t\ (272) = 2.76$, $p = .01$, two-tailed). The effect size of the differences in the mean scores (mean difference = .21, 95% *CI*: .06 to .35) was small ($d = .26$) based on Cohen's (1988) guidelines. Given the small effect size difference between the meditator and non-meditator groups, data were collapsed and the total sample of 510 participants was used for additional analysis.

Hierarchical multiple regression was performed and an evaluation of the model summary (Table 3) suggested that the overall model explained 65% of the variance in TEI. The ANOVA table (Table 4) indicated that the model as a whole was significant ($F\ (10, 499) = 94.46$, $p = <.001$). Attachment-related anxiety made the greatest unique significant contribution, as represented by the largest beta value ($\beta = -.69$, $p = <.001$). Mindfulness ($\beta = .46$, $p = <.001$) and the moderator variable of attachment anxiety with mindfulness ($\beta = .46$, $p = <.001$) also made significant unique contributions to the regression equation (Table 5).

The significant interaction (i.e., moderating effect) of mindfulness with attachment anxiety on TEI was expressed by a change in the standardized beta value from negative to positive ($\beta = .42$, $p = .01$), meaning that higher levels of attachment anxiety explained lower levels of TEI, while higher levels of mindfulness explained higher levels of TEI. The significance of this moderator variable suggests mindfulness may serve a protective or buffering role for more anxiously attached adults. Neither attachment-related avoidance nor its interaction with mindfulness emerged as significant in

explaining global TEI. Lastly, college classification added unique variance to the overall model (β = -.11, p = .001), which indicated an inverse relationship. In other words, higher levels of college classification explained lower levels of TEI.

Discussion

The primary objective of this study was to ascertain the degree to which mindfulness interacted with anxious and avoidant attachment levels in such a way as to impact the strength or direction of global trait emotional intelligence (TEI). Findings suggested a significant moderator effect of attachment anxiety with mindfulness on TEI. Findings from this study may inform practice implications for counseling psychologists working with anxiously attached individuals. Specifically, the addition of mindfulness skills training to treatment as usual for this population may increase levels of emotional intelligence, thus protecting more anxiously attached adults from some of the interpersonal difficulties associated with higher levels of attachment-related anxiety. For psychotherapists who have assessed clients' adult attachment styles through measures such as the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) or the Relationship Structures (ECR-RS; Fraley et al., 2011) questionnaire, this research may inform treatment goals and interventions related to cultivating emotional self-efficacy (TEI) and/or mindfulness.

Two exploratory hypotheses were tested: (1) levels of TEI would significantly change in either strength or direction, depending upon levels of mindfulness among more avoidantly attached adults; (2) levels of TEI would significantly change in either strength or direction, depending upon levels of mindfulness among more anxiously attached adults. Results supported the second hypothesis, indicating that variance in TEI among

more anxiously attached adults differed depending on mindfulness levels. Results did not support the first hypothesis, suggesting that mindfulness did not moderate the relationship between attachment-related avoidance levels and TEI for participants in this study.

Theoretical Implications

According to attachment theory, individuals are thought to construct internal working models, or mental representations, of themselves and others based on repetitive interpersonal interactions with their primary caregiver(s) that are perceived as either rewarding or frustrating (Ainsworth et al., 1978; Bowlby, 1969). These working models are considered cognitive processes that exert an influence on the manner in which individuals tend to perceive, attend to, and process emotionally laden content (e.g., Fraley et al., 2006). The attachment behavioral system serves a crucial role in one's ability to perceive an attachment figure is accessible, nearby, and attentive. An assumption of attachment theory is that differences in perceptual vigilance of emotionally and socially evocative stimuli accounts for greater activation of the attachment behavioral system among anxiously attached individuals (e.g., Fraley & Shaver, 2000). Mikulincer and Shaver (2007) refer to this heightened state of arousal as hypervigilance, which is thought to account for differences in the degree to which people are concerned about whether significant others love them, and subsequently, whether they feel lovable themselves.

Findings added to the theoretical knowledge base of attachment theory by building upon prior studies that have tested theoretical assumptions of attachment theory among anxiously attached adults. Research by Fraley et al. (2006) found that adults with higher levels of attachment-related anxiety tended to be more hypervigilant to emotional cues and interpreted the emotional content of others' facial expressions more quickly than

other adults. Anxiously attached individuals showed more impaired judgment in accurately judging emotional cues than less anxiously attached adults, although they were significantly more accurate in their emotional conclusions when given more time and information to process the external stimuli (i.e., the emotional content of facial expressions). Fraley et al.'s (2006) findings are important to the ongoing development of attachment theory, since the paradoxical results seem to imply that more anxiously attached adults demonstrate greater accuracy than others in their assessments of interpersonal emotional cues when allowed more time and information before making final judgments. In other words, more anxiously attached adults' typical tendency toward hypervigilance may be adaptive if they learn effective methods of emotional regulation.

Attachment theory is also considered an emotion-regulation model (e.g., Fraley et al., 2011), rendering it useful in understanding differences in facets of TEI. This study's findings provided further support for the dynamic nature between levels of attachment-related anxiety and TEI; interpersonal patterns and expectations commonly developed in early formative relationships among more anxiously attached individuals may be linked with their emotional interpretations and reactions in adulthood. In particular, these findings contribute to the extant literature by offering insight into the influential role of attachment-related anxiety levels within the context of mindfulness and TEI.

Practice Implications

Counseling psychologists would benefit from incorporating relevant findings from this study and the extant literature into practice. Practice implications from this study are of particular relevance to counseling psychologists, whose role, according to the American Psychological Association (APA, 2008), involves helping "people with

physical, emotional, and mental disorders improve well-being, alleviate distress and maladjustment, and resolve crises. In addition, [counseling psychologists] provide assessment, diagnosis, and treatment of psychopathology" (Lichtenberg, Resnick, & Minami, 2012, p. 8). The Society of Counseling Psychology (n.d.) distinguishes the primary functions of counseling psychologists as attending to the "emotional, social, vocational, educational, health-related, developmental and organizational concerns" within a multicultural context at the individual and community levels.

Counseling psychologists may provide more effective treatment for this subset of clients by integrating mindfulness-based interventions into the therapeutic process with the explicit purpose of increasing aspects of TEI (e.g., well-being, self-control, emotionality, and sociability). Results suggest that these individuals could reverse the negative impact of higher levels of attachment anxiety on emotional intelligence by cultivating mindfulness through practice (Bishop et al., 2004). Clinicians could assess treatment effectiveness through readministration of the aforementioned self-report measures; effective outcomes could then be assessed based on significant changes in clients' levels of emotional intelligence. In essence, counseling psychologists would anticipate that if a more anxiously attached adult's mindfulness level increases over the course of treatment, then his or her level of TEI should increase as well.

Prior studies (e.g., Shapiro, Oman, Thoresen, Plante, & Flinders, 2008) have found a variety of benefits that result from mindfulness training interventions among college and graduate students. In particular, Koru Mindfulness (Rogers & Maytan, 2012), a workshop at Duke University, has demonstrated success in teaching mindfulness

and meditation skills to undergraduate and graduate students between the ages of 18 and 29.

A recent study by Abe et al. (2013) found preliminary evidence that trait emotional intelligence can be developed among undergraduate medical students (N = 181) through participation in a half-day mental health workshop designed to cultivate emotional awareness. The effectiveness of this workshop in building emotional awareness relates to this study, as emotional awareness is considered to be a component of both mindfulness and emotional intelligence (Kabat-Zinn, 2003; Nielsen & Kasniak, 2006). Trait emotional intelligence was assessed with the TEIQue-SF at three intervals: pre- and post-intervention and at a one-year follow-up. Results indicated that TEI significantly increased at post-intervention and that improvements were maintained at the one-year follow-up. Eighty percent of participants reported they would recommend the workshop to others. Participants also indicated noticeable improvements in their perceived abilities to listen to and express emotions. Researchers concluded that talking openly with others about distressing experiences improves TEI (Abe et al., 2013). This relates to the present study in that increased levels of mindfulness are associated with the ability to describe and discuss unpleasant thoughts and emotions with greater ease (e.g., Baer et al., 2006; Linehan, 1993a). Based on the results of this study, more anxiously attached individuals may become more comfortable discussing internal distress with others through developing mindfulness.

Counseling psychologists working within a university counseling center setting may integrate research findings from Abe et al.'s (2013) workshop with college students in a group counseling or campus outreach format. Students may respond differently to

emotional intelligence or mindfulness building interventions based on levels of anxious and/or avoidant attachment. Clinicians can integrate findings by including mindfulness exercises into practice (e.g., Linehan, 1993b). Incorporating aspects of Abe et al.'s (2013) emotional intelligence workshop with the Koru mindfulness program (Rogers & Maytan, 2012) may provide more anxiously attached students with even greater benefits. One way of integrating both programs would be adding an experiential TEI-building exercise (e.g., listening and reflecting emotions in dyads) to the current structure of Koru.

Limitations

This study employed a cross-sectional non-experimental design using online survey methods. While this design has benefits, such as easy access to a wide range of participants, reduced time and cost, there are inherent limitations involved with self-reported information and online survey methods (Groves et al., 2011). Possible disadvantages of self-reports include social desirability bias and errors in self-observation (Hancock & Flowers, 2001). One of the limitations of cross-sectional designs is that since data are collected from participants at one specific point in time, it is not possible to employ repeated measurements and assess change over time. Generalizability (i.e., the degree to which this study's sample was representative of the target population) was a threat to external validity for this cross-sectional study design. Additionally, this was not an experimental study involving a control group, meaning that inferences regarding cause and effect cannot be made.

Future Directions for Research

Further experimentation could shed light upon the potential causal role of mindfulness in the direction of greater TEI. One method by which researchers may

investigate this causal role is through utilizing a study design intended to capture changes across time (e.g., longitudinal) or through a true experimental design. The integration of biofeedback assessment measures may provide useful information about changes in participants' physiological indicators of stress (e.g., pulse, blood pressure, or galvanic skin response). This would allow individuals to receive immediate feedback about their physiological state and learn how mindfulness exercises (e.g., deep breathing, progressive muscle relaxation) can decrease anxiety and slow a rapid heart rate. Researchers could obtain baseline measures of these physiological constructs prior to engaging in mindfulness skills training exercises, which may offer insight into the usefulness of practicing mindfulness as a means of managing stress and regulating emotions.

Results from this study suggest that assessment of attachment levels among participants in TEI-building workshops/interventions (e.g., Abe et al., 2013) may serve as useful data to guide treatment and measure outcomes. For instance, if participants completed an attachment measure, such as the ECR-R (Fraley et al., 2000), and results highlighted which participants had higher levels of attachment-related anxiety, these individuals could receive additional mindfulness skill training exercises. Mindfulness interventions would be particularly important for this group (i.e., more anxiously attached adults), since results from the present study suggest that more anxiously attached adults may be more likely to have higher levels of TEI if they also demonstrate higher levels of mindfulness. Thus, future research could examine the effectiveness of the intervention.

Assessment of participants' attachment orientation prior to engaging in a workshop would also provide an opportunity to explore within- and between-groups differences of adults with higher levels of attachment-related anxiety and avoidance. As

mentioned, this workshop format could be tailored for the specific needs of more anxiously attached adults by including didactic and experiential mindfulness exercises. By adding mindfulness-based intervention(s) to a TEI-building workshop/intervention, researchers may assess the extent to which mindfulness serves a protective role among more anxiously attached adults that enables greater gains in TEI. Although this study did not find a significant moderating role of mindfulness among participants with higher levels of avoidant attachment or secure attachment, future research utilizing an experimental design may be warranted to draw further conclusions for these groups.

Conclusions

The current study has offered additional support for the established relationships between attachment levels, TEI, and mindfulness. As expected based on prior studies, high levels of attachment-related anxiety and avoidance were inversely related to both global TEI and overall mindfulness. This study served to bolster and support the aforementioned relationships, as well as making a unique contribution to the relevant literature by illuminating a significant moderating role of mindfulness on TEI levels among anxiously attached adults. The impact of the moderating role of mindfulness for individuals with higher levels of attachment-related anxiety implies that mindfulness may serve a protective function in the existence of acquisition of trait emotional intelligence. Despite the aforementioned limitations of the present study, the results add additional information to the literature by providing a meaningful contribution to the expanding base of mindfulness research. Specifically, employing mindfulness-based interventions with more anxiously attached adults may lead to greater trait emotional intelligence. Consequently, more anxiously attached could receive the wide array of intra- and

interpersonal benefits associated with both secure attachment and adaptive levels of emotional intelligence.

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Table 1

Summary of Demographic Characteristics

Variables	Category	*n*	%
Gender	Male	118	23.1
	Female	390	76.5
	Other	2	0.4
Age	18 – 20	195	38.2
	21 – 24	100	19.6
	25 – 29	66	12.9
	30 – 34	50	9.8
	35 – 39	27	5.3
	40 – 44	20	3.9
	45 – 49	15	2.9
	50 – 54	19	3.7
	55 – 59	13	2.5
	60 – 64	5	1.0
Race	Caucasian	337	66.1
	Black / African-American	21	4.1
	Hispanic/Latino(a)	84	16.5
	Native American / Alaskan Native	4	0.8
	Asian	23	4.5
	Native Hawaiian / Pacific Islander	1	0.2
	Multiple races	35	6.9
	Other	5	1.0
College	Freshman	92	18.0
	Sophomore	71	13.9
	Junior	82	16.1
	Senior	101	19.8
	Graduate Student	133	26.1
	Other	31	6.1
Mindfulness Meditation*	Yes	144	28.2
	No	366	71.8

Note. $N = 510$.

*Mindfulness Meditation was defined as "a technique of meditation in which distracting thoughts and feelings are not ignored, but are rather acknowledged and observed nonjudgmentally as they arise to create a detachment from them and gain insight and awareness" (Mosby's Medical Dictionary, 8th ed., 2009).

Table 2

Descriptive Statistics and Pearson Correlations of Continuous Variables

	1	2	3	4	5	6	7	8	9
1. Anxious	-								
2. Avoidant	.51**	-							
3. Observe	-.09	-.06	-						
4. Describe	-.33**	-.32**	.34**	-					
5. Aware	-.34**	-.26**	.11*	.34**	-				
6. Nonjudge	-.43**	-.33**	.03	.30**	.42**	-			
7. Nonreact	-.30**	-.19**	.36**	.40**	.31**	.38**	-		
8. Mindful	-.48**	-.36**	.53**	.73**	.67**	.68**	.71**	-	
9. TEI	-.57**	-.44**	.26**	.59**	.57**	.52**	.58**	.76**	-
	1	2	3	4	5	6	7	8	9
α	.94	.95	.82	.90	.87	.91	.82	.92	.90
M	3.30	2.86	3.62	3.51	3.12	3.08	3.12	3.30	5.14
SD	1.33	1.19	0.75	0.83	0.77	0.92	0.71	0.53	0.78

Note. $N = 510$. 1 = ECR-R Attachment Anxiety subscale; 2 = ECR-R Attachment Avoidance subscale; 3 = FFMQ Observing subscale; 4 = FFMQ Describing subscale; 5 = FFMQ Acting with Awareness subscale; 6 = FFMQ Nonjudging of Inner Experience subscale; 7 = FFMQ Nonreactivity to Inner Experience subscale; 8 = FFMQ overall Mindfulness; 9 = TEIQue-SF Global TEI.

**$p < .01$.

*$p < .05$.

Table 3

Model Summary

Step	*R*	R^2	Adj. R^2	SE	R^2 change	*F* change	Sig. *F* change	D-W
1	.25	.06	.05	.76	.06	6.49	<.001	
2	.62	.38	.37	.62	.32	128.11	<.001	
3	.81	.65	.64	.46	.27	386.45	<.001	
4	.81	.65	.65	.46	.01	3.98	.019	1.87

Note. Dependent variable was Global TEI. Step 1 = Age, Race, Gender, College Classification, Meditation, Step 2 = Attachment Avoidance, Attachment Anxiety, Step 3 = Mindfulness, Step 4 = Attachment Anxiety*Mindfulness, Attachment Avoidance*Mindfulness.

Table 4

ANOVA Table

Step		Sum of Squares	df	Mean Square	*F*	*p*
1	Regression	18.53	5	3.71	6.49	<.001
	Residual	287.96	504	.57		
	Total	306.49	509			
2	Regression	115.84	7	16.55	43.57	<.001
	Residual	190.65	502	.38		
	Total	306.49	509			
3	Regression	198.86	8	24.86	115.71	<.001
	Residual	107.63	501	.22		
	Total	306.49	509			
4	Regression	200.55	10	20.06	94.46	<.001
	Residual	105.94	499	.21		
	Total	306.49	509			

Note. Dependent variable was Global TEI. Step 1 = Age, Race, Gender, College Classification, Meditation, Step 2 = Attachment Avoidance, Attachment Anxiety, Step 3 = Mindfulness, Step 4 = Attachment Anxiety*Mindfulness, Attachment Avoidance*Mindfulness.

Table 5

Hierarchical Regression Analysis

Step	Explanatory Variable	*B*	SE *B*	β	*t*	*p*	Adj. R^2	*F* change
1							.05	6.49
	Gender	.02	.05	.01	.41	.69		
	Age	.02	.01	.04	1.3	.18		
	Race	-.02	.01	-.04	-1.4	.16		
	College	-.05	.02	-.11*	-3.34	.001		
	Meditation	.03	.05	.02	.60	.55		
2							.37	128.11
	Anxiety	-.41	.11	-.69*	-3.75	<.001		
	Avoidance	-.04	.12	-.06	-.34	.74		
3							.64	386.45
	Mindfulness	.68	.11	.46*	5.98	<.001		
4							.65	3.98
	Anxiety x Mindfulness	.08	.03	.42*	2.52	.01		
	Avoidance x Mindfulness	-.01	.04	-.05	-.29	.77		

*$p < .05$.